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ABSTRACT

Designed as an instructional aid in teaching about custodian housekeeping methods and materials, this booklet contains information on the school custodian's responsibilities and methods for maintaining the building inside and outside, including the cleaning and sanitation of classrooms, restrooms, shower rooms, lunchrooms, corridors, and special rooms (industrial arts, homemaking classes, library, auditorium, and multipurpose rooms). Specific information is given on the use of tools, equipment, and cleaning chemicals. Also included are sections on maintaining lighting systems, cleaning glass, cleaning venetian blinds, care and cleaning of drinking fountains, care of carpets, maintenance of fire extinguishers and alarms, flag display and care, stain removal (chart given), care of cleaning equipment, and a summer work schedule of general duties and cleaning tasks. (JB)

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ED159405

OREGON CUSTODIAL TRAINING PROGRAM

(Revised 1978)

Housekeeping Methods and Materials

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Preface

This publication is a revision of the *Housekeeping Methods and Materials Manual* which was published in 1963 by the Oregon Department of Education. It is designed to serve as an instructional aid in teaching about custodian housekeeping methods and materials.

Information concerning the tools, equipment and chemicals used in daily and periodic housekeeping jobs is presented, along with techniques for cleaning all areas and fixtures in the building.

Instruction should be constantly modified to reflect current improvements in materials, equipment, and methods. Every effort has been made to include the newest techniques in this revised edition.

Monty Multanen
Director, Career and
Vocational Education Section

Acknowledgments

The information presented on the following pages represents the knowledge and experience of many custodians, instructors, maintenance personnel and industrial consultants in Oregon. Credit is due them for their efforts in revising this publication.

Appreciation is expressed to the Oregon School Employees Instructors Association for reviewing the contents and making recommendations.

Pictures and illustrations are from the Portland Public Schools as well as from various catalogs and advertising brochures of building maintenance supply companies.

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Introduction

This publication covers the custodian's responsibilities for maintaining the building inside and outside, including cleaning and sanitation of classrooms, restrooms, shower rooms, lunchrooms, corridors, special rooms; supplies and equipment. Work schedules are suggested.

Recommended housekeeping techniques vary among the most experienced and knowledgeable custodians, and even among authoritative writers on the subject. This is due to the varying factors of climate; ground surface surrounding the building; age of the building; type of construction; the number, age and type of occupants; and the extent of building usage. The maintenance budget and the workload assigned to a custodian are also important factors. The information sheets provided herein are intended to assist the custodian in avoiding serious mistakes. The job techniques presented are not considered ultimate or universal—they are intended only as a guide and for reference.

References

"Programmed Cleaning and Sanitation," Soap and Detergent Association.

"Building Custodian," United States Department of Health, Education and Welfare, Office of Education.

"Operation and Maintenance," The University of the State of New York.

"School Plant Operations," Baker and Peaters, Stanford University, School of Education, School Planning Laboratory.

"Let's Be Right on Flag Etiquette," Distributed by National Emblem Sales, The American Legion, P.O. Box 1055, Indianapolis, Indiana 46206.

Terms Most Frequently Used in Chemical Cleaning

In most instances the literature and printed instructions furnished by a recognized, dependable supplier may be considered as accurate and honest. Therefore, in the interest of simplification and safety in cleaning, it is recommended that commercially prepared cleaners, sanitizers and other applicable materials be used instead of the custodian attempting to formulate solutions or compounds.

Since the custodian must use various chemical cleaning products, it becomes necessary to learn about the types, their proper uses and reactions. There can be no guesswork in the use of chemical cleaners. It must again be emphasized that the labels must be followed implicitly. Failure in the proper use of these chemicals is a deficiency in the ability of the custodian to do the job correctly.

Definitions of Terms

Bio-Degradable—cleaner, compounded to break down foam residue by sewage bacteria, thus reducing the possibility of stream pollution from waste water.

Detergent—that which cleanses or purges.

Soap—a natural detergent formed when fats and oils are treated with alkalies.

Synthetic Detergent—a wetting agent and an ingredient used in a balanced cleaner.

Balanced Chemical Cleaner—a compound which contains a sufficient number of ingredients, possessing certain necessary properties, in proper proportion, to do a specific cleaning job.

Hard Water—water containing mineral salts (calcium, magnesium, iron).

Water Soluble Soils—sugar, starches, animal and vegetable protein.

Water Insoluble Soils—lime mineral deposits, animal and vegetable fats, etc.

Solution—liquid and some other substance which will dissolve when mixed.

Solute—the substance to be dissolved in the liquid (salt or sugar in glass of water).

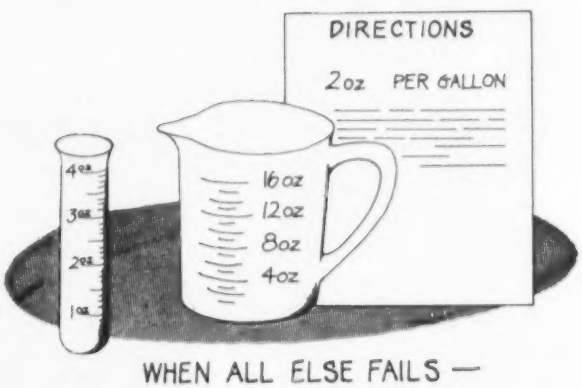
Solvent—the liquid in which the substance dissolves.

Miscible—the term used for liquids which can be mixed together, such as alcohol and water.

Immiscible—liquids which do not mix together, such as oil and water.

Emulsification—the term used for the mixing of immiscible liquids like oil and water shaken together. Fresh milk is a common emulsion. Homogenized milk is called a stable emulsion.

Saponification—the process of making soap, i.e., chemical action occurring between an alkali and animal or vegetable fats.



Water Softening—removal or inactivation of the mineral salts which make water hard.

Precipitation—method of removing water hardness by chemical reaction in which the mineral salts are formed into an insoluble mass which separate from the cleaning solution.

Sequestration—the method in which the mineral salts of hard water are not precipitated but remain suspended.

Deflocculation or Dispersion—chemical action whereby soil in solution is broken up into small particles.

Suspension—chemical action of holding up dispersed insoluble particles in solution.

Wetting—the action which lowers the surface tension of water, thus enabling it to contact all surfaces.

Penetration—the term used to describe the action of a liquid entering into porous materials.

Dissolving—the term used to explain the chemical reaction occurring when the cleaning solution changes various insoluble soils into soluble materials.

Peptization—the breaking up or changing of

protein and heavy type soils which are only partially soluble into a finely subdivided state in a solution.

Rinsing—the property of a balanced cleaner which enables it to be more easily and completely flushed from the surface.

The Alkalies—the chemicals which are alkaline in nature in relation to the acids.

pH Scale—the method of measuring the degree of alkalinity or acidity possessed by a detergent solution. Imagine a ruler divided into 14 equal sections and numbered accordingly. The number 7 is the middle of the pH scale and represents the neutral point where neither acids or alkalies predominate. The numbers less than seven indicate the acid solutions. The numbers above seven represent the alkalies.

Basic Alkalies—sodium carbonate (soda ash), sodium hydroxide (lye), sodium metasilicate, sodium bicarbonate (baking soda), amines (ammonia).

The Phosphates—trisodium phosphate, tetrasodium pyrosphosphate, sodium tripolyphosphate, sodium hexametaphosphate, sodium tetraphosphate.

The Acids—inorganic acids; muratic, nitric, sulphuric, phosphoric. Organic acids; milder in form, less irritating to skin, acetic, citric, lactic.

Detergent-Sanitizers—chemical compounds which include a sanitizer in the detergent.

Phenol-Coefficient—Phenol: a powerful poison obtained from coal tar and known popularly as carbolic acid (no longer used except as a standard for determining the bacteriological strength of modern disinfectants). Coefficient: that which unites with something else in producing a certain result or effect. The strength of a disinfectant is measured by what is called Phenol-Coefficient.

Control of Bacteria

In order to determine what is expected of the custodian in the control of bacteria in public buildings, it is essential to learn what to do in this field. The following definitions provide a basis for understanding control procedures.

Pathogenic Bacteria—harmful, communicable, contagious or catching.

Benign Bacteria—neither harmful or helpful to man.

Beneficial Bacteria—helpful to man: cheese, alcoholic beverages, etc.

Classification of bacteria:

1. Cocci—these germs are round
   a. Streptococci—grouped in a chain (strep throat)
   b. Staphylococci—grouped as a bunch of grapes (boils, pimples, etc.)
2. Bacilli—thin or rod shaped (typhoid, T.B., anthrax)
3. Spirilleae—corkscrew in appearance (cholera, syphilis).

Viruses—So small they cannot be seen through ordinary microscope. Viruses are the cause of polio, small pox, mumps, measles, influenza, the cold.

Yeasts—Larger than bacteria. Must have air for growth. Reproduced by budding.

Molds—Many-celled, fine, cottony, fiberlike bodies called mycelia. Molds are the cause of ringworm, athletes foot, skin diseases. Penicillin mold is beneficial to man.

Protozoa—One-celled animal organisms. Many harmful to man. (Amoebic dysentery.)

Worms—Flat worms (tape worm) and round worms (hook worm).

Germicides or Bactericides—Chemicals used to kill all bacteria. Phenol (carbolic acid), formaldehyde, iodine, chlorine, quaternary compounds.

Disinfectant—Used to kill pathogenic bacteria.

Antiseptic—Used to inhibit growth and multiplication of bacteria on wounds.

Preservatives—Used to preserve foods (salt, soda, vinegar, etc.).

Bacteria must be carried from one place to another by some person or thing. Bacteria may be transmitted by means of air, water, food, hands, coughing or sneezing, rodents, insects, unclean equipment, floors, toilets, etc. *One of the most dangerous vehicles of transmission is the hand.*

Methods of Cleaning Classrooms

With the exception of corridors, classrooms floors are the most frequently used in the school building. Every pupil enters and leaves a classroom at least eight periods per day in junior and senior high schools. In elementary schools, usually classes do not move about this often. In all rooms, dust and lint collect on the floors, furniture, light fixtures and window sills. The more movement there is in and out of classrooms the more dust will be deposited. The amount of dust carried into a building varies according to the type or condition of the school grounds. Where there is a good blacktop or cement coverage of the grounds adjacent to the buildings, the amount of dust carried into the building is greatly reduced depending on how clean the blacktop or other hard surface is kept. Where there is a covering of gravel or no covering at all, the abrasive and dust problem is one of real concern to the custodian and school officials. Whatever factors are causing dust in the building, it is the duty of the custodians to keep the classroom clean. Daily dusting in all areas must follow the cleaning of floors. Proper cleaning tools and the most efficient procedure is necessary.

Tools and Equipment

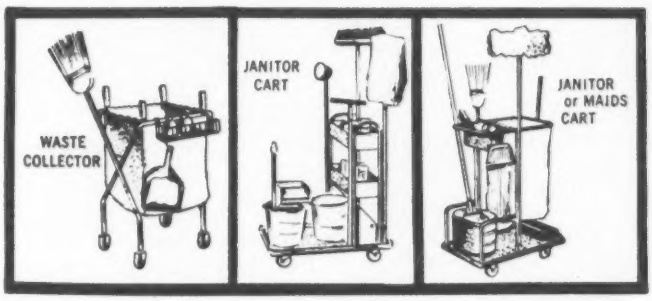
Before entering a classroom or any area to be cleaned, it is important for the custodian to be equipped with all of the tools and supplies needed for the job.

These are:

1. A cart which will carry all of the tools and cleaning supplies needed for the daily cleaning job.
2. One long strand, 24-inch swivel, sweeping mop.
3. One 36-inch sweeping mop of the same type.
4. A hand duster, hand brush, and dust pan.
5. A treated dust cloth.
6. Cleaning agents for cleaning wainscoting, etc., spray bottle, cleaning cloths, towel, sponge.
7. Chalkboard erasers and chalk.
8. Cleaning cloth and sponge, synthetic chamois back eraser for cleaning chalkboard.
9. A portable vacuum cleaner.
10. A good quality floor brush with a long handle.
11. Wet mops, buckets, mop wringer.

The Cart

Provisions should be made on the cart for carrying all the above-mentioned tools and supplies. The cart should have rubber-tired casters, and carry a trash box or bag for receiving trash, wastepaper and sweepings. The trash container on the cart should have a capacity of two to four bushels, and be secure on the cart but easily removable for emptying. A floor or bench brush and a dust pan will be suitable for picking up sweepings or litter collected by the sweeping mop. When the trash box is full, it is emptied into larger receiving trash boxes in the cleaning area, or it can be moved to a proper incinerator where the trash is burned. This type of cart will move easily from room to room so, with the equipment, tools and cart ready, one can proceed with the cleaning.



Cleaning a Typical Classroom

A typical classroom has smooth floors of resilient tile, wood or other material.

During the cleaning operation, be alert to needed repairs, defective door closers, missing or defective floor glides, burned out or defective light globes or fluorescent tubes (replace daily).

Be ever watchful for hazardous conditions, broken glass, defective furniture, slippery floors. Look for fire hazards. Make notes.

Procedure

1. Park the cart near the door inside or outside the room, depending on traffic conditions.
2. Empty the pencil sharpener. Usually the sharpener is close to the door near the wastepaper basket. If not, the wastepaper container should be carried to the pencil sharpener. Empty cuttings from the sharpener into the basket or container.
3. Clean chalkboards as outlined in a later paragraph and predetermine what must be left on the chalkboard. Clean the dust from the chalkboard tray by moving the chalk dust toward the ends of the chalk trays closest to the door and into a waste receptacle or by vacuuming. Pieces of chalk too short for use should be removed with the chalk dust. Usually, a supply of chalk left on the chalk trays will last for a week, especially where the chalkboard use isn't heavy. The recommended practice is to clean chalkboards daily. All chalk trays must be cleaned daily, and erasers cleaned daily with a vacuum cleaner.
4. Clean all erasers with a vacuum cleaner in an area where it is most convenient and functional. Never clean erasers during school hours in an area where the noise will be disturbing to the students in the classrooms. Construct a box of light material with two compartments, one for

clean erasers and chalk, and one for dust-loaded erasers. Include a handle for carrying. Construct the box so that it may be placed on the custodial cart for easy conveyance and convenience.

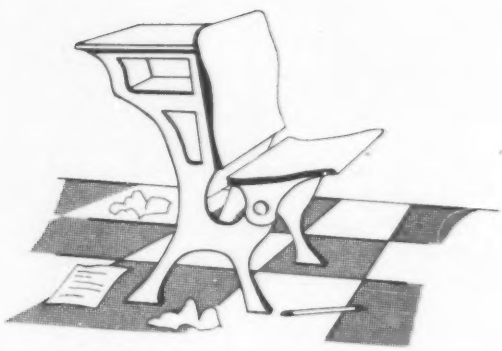
5. Empty the classroom waste container into the trash box, clean and replace waste container in its original position.
6. Either a 24 or 36-inch swivel dust mop should be used to sweep the floor. It is usually the best practice to begin cleaning the far side of the room, either in the front or the rear depending upon the location of the door. Always work toward the door. Each room may have a different furniture arrangement. The custodian must study each room in order to determine the sweeping route which obtains the most efficient job. The custodian will avoid a tiresome and frustrating situation by using a well planned procedure for cleaning each room thoroughly.
7. Use wet mops, buckets and wringer for spot cleaning of floor soil not removable by dry sweeping methods. Some soil may be removed by damp mopping without a need for rinsing, otherwise mopping, using a detergent solution and rinsing, may be necessary.

   Use a detergent spray bottle, sponge, cloth or towel for spot cleaning wainscot or other soiled surfaces.
8. Dust with a treated cloth or duster after allowing ample time for dust to settle.

In items 7 and 8, efficient practice may be to schedule these steps as separate operations, moving from room to room after other work is done.

Cleaning the Floor of a Typical Classroom with Single Two-Place Student Desk and Chair, Smooth Floor, Resilient Tile, Wood, Etc.

1. Assume the desks are two-place units, thirty units in the room. The room is large enough to allow easy sweeping movements. The desks are facing north, and the door is in the northeast corner of the room. The teacher's desk is in front and in the northwest corner or in the center of the room. Start sweeping on the west, or the side of the room opposite the door. Remove dirt from the corners with a counter brush. With the swivel-type mop, begin sweeping on the side of the room and down the aisle, covering the space beneath the desks and the cross aisles to the rear of the room. Turn left on the rear aisle, sweeping up the second aisle toward the front of the room. Repeat the operation under the desks and in the aisle, moving to the front area. Now proceed as before, back and forth, until the desk area has been swept. Sweep the front of the room, starting near the door. Move back and forth, bringing the sweepings from the desk area on the last movement to the door. (See diagram on page 5.)
2. During the sweeping operation, keep the sweeping mop on the floor; lifting the mop will allow



FLOORS ARE COLLECTORS

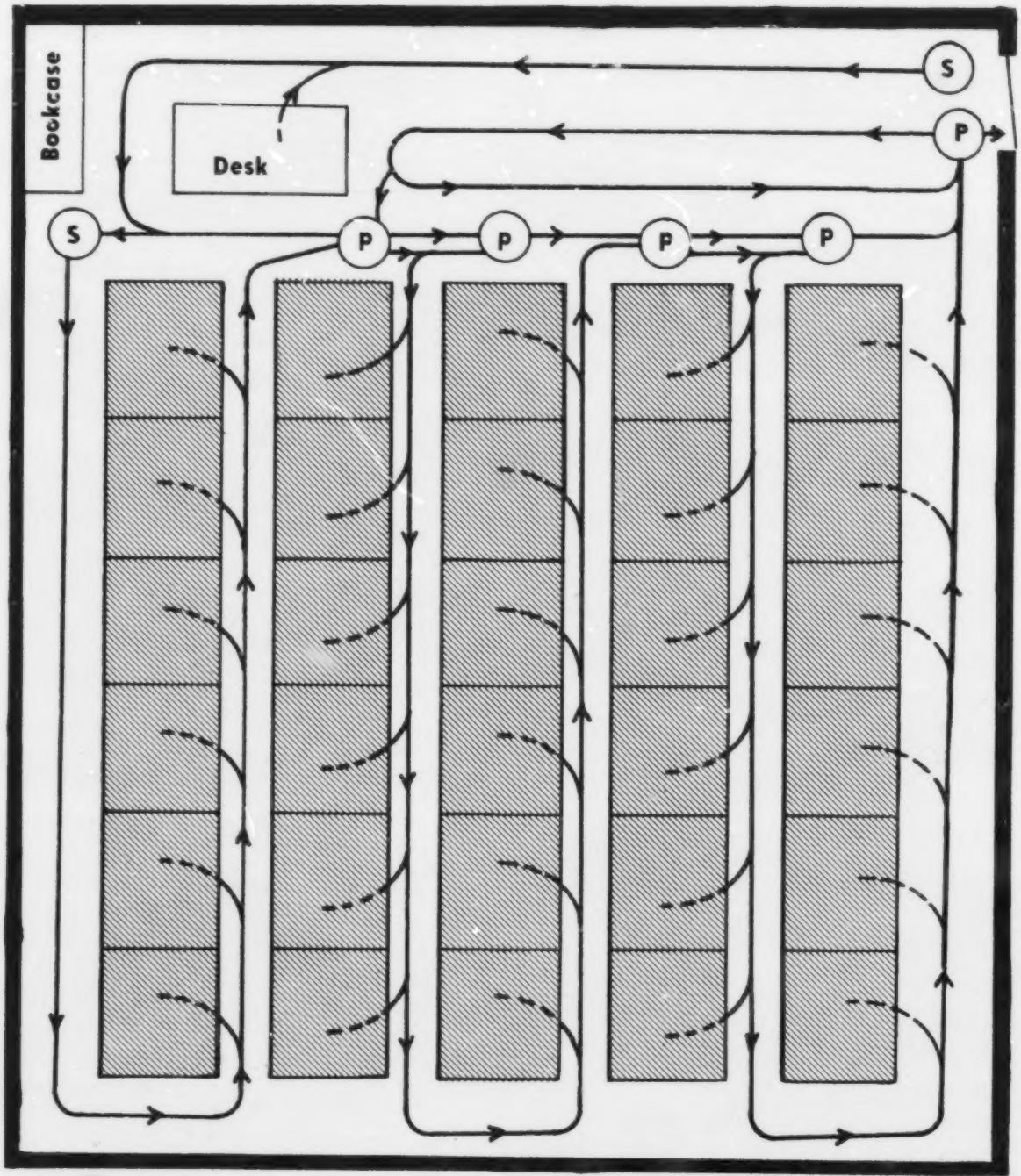
dust and litter to fall to the floor and may remai
there. If the furniture has been moved, rearrang
in the same pattern as it was originally, c
according to the teacher's preference.

3. It is generally good practice to sweep the tras
from the room into the hallway. Close the doo
and switch off the lights. Shake the mop lightl
in the hallway or, preferably, brush dirt into th
trash container with a stiff-bristled scrub brus
which combs the strings. Pick up the trash an
move to the next room. It is considered the bes
practice to sweep all the classrooms and othe
special areas before dusting. This allows any dus
which might have been raised during the sweep
ing to settle.
4. Mop or damp mop soil not removed by dr
sweeping.
5. Carpeted areas—cleaning of is described in
later paragraph.

Cleaning the Floor of a Typica Classroom with Combination Stu dent Desk Units, Smooth Floor Resilient Tile, Wood, Etc.

1. Many modern classrooms are equipped with stu
dent desk units constructed in one combinatio
frame including the desk, chair, and book rac
Since the lower bracing of the frame is but a fe
inches above the floor, cleaning beneath th
frame is difficult, even with a swivel-type mo
In most cases, the desk units must be moved i
order to clean effectively beneath them.
2. A recommended method is to start at the side
the room opposite the door, sweep down the aisl
next to the wall to the rear and turn the corne
Remove any dirt in the corner with a counte
brush. Proceeding toward the front of the roon
move the desk units to the clean area next to th
wall and sweep the desk area into the aisle, as th

Cleaning of the floor in a typical classroom with single/two-place student desk with chair.

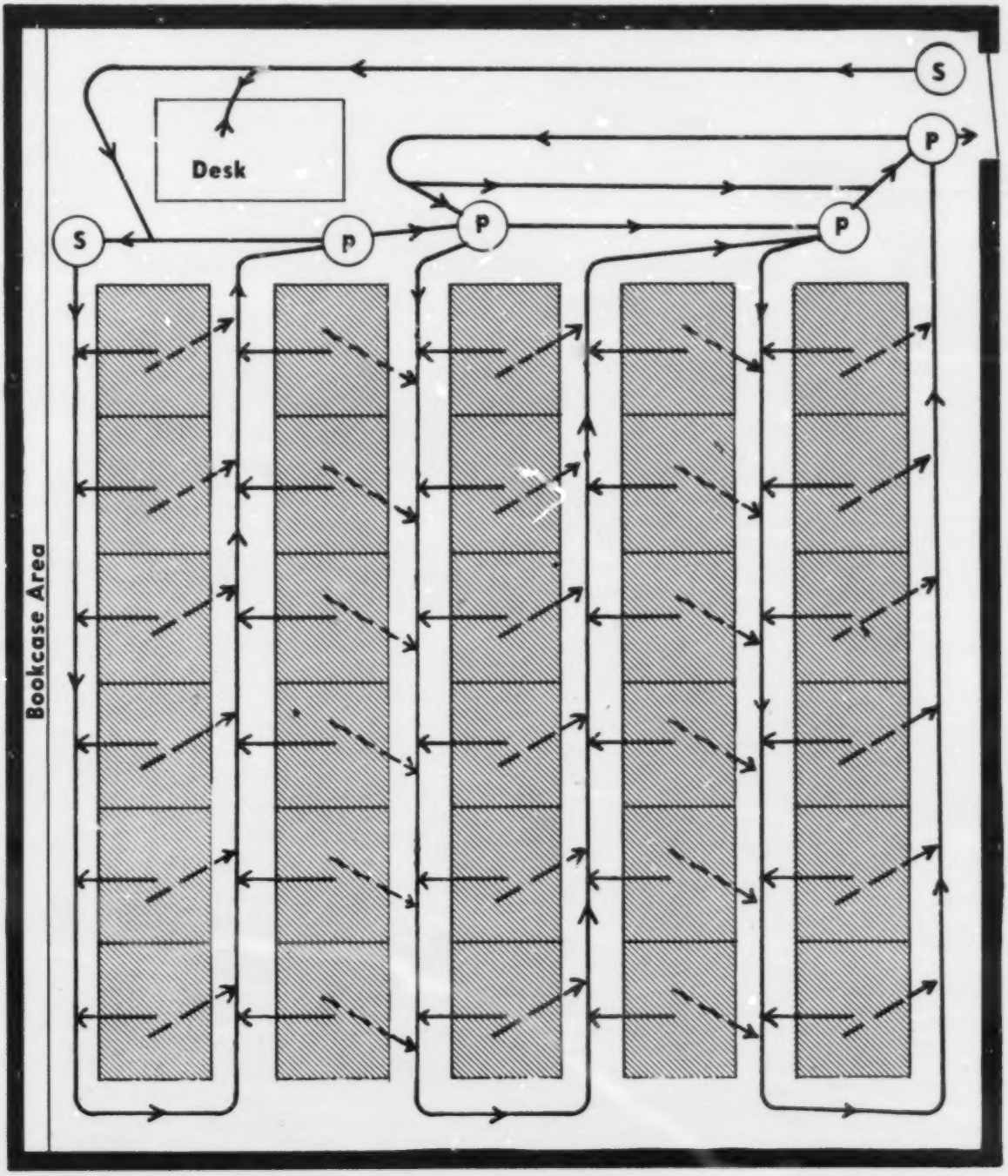


S = Start

P = Secondary pick-up point

P = Major pick-up point

Cleaning the floor in a typical classroom with combination student desk unit



S = Start

p = Secondary pick-up point

P = Major pick-up point

diagram indicates. Move the desk units back into position as you proceed up or down the aisles. Deposit the dirt in front of the room at pickup points indicated in the diagram. Continue the operation row by row, concluding with the dirt deposit at the door. Any doubling back should be avoided if possible. Clean dirt from all corners.

Sweep the front of the room, starting at the door and moving along the front wall. Turn the corner, then sweep back bringing the aisle deposits to the major pickup point at the door. Sweep under the teacher's desk wherever it is located. Sweep back and forth until the front area is completed and all dirt is moved to the major pickup point.

Sweeping the front of the room before or after the desk area is optional, but it is important that the custodian does a thorough job of cleaning with a minimum of steps. Since classrooms vary in size, use and types and arrangements of furniture, the custodian should study each room and develop a procedure for cleaning that is most efficient.

3. Spot mopping—described previously.
4. Carpeted area cleaning—described in a later paragraph.

Other Furniture Arrangements

1. Where there are large tables and chairs, such as in art rooms, sweeping is comparatively simple. If not objectionable, chairs should be placed on the tables. The procedure in sweeping should be the same as outlined before—always from the rear or far side of the room toward the door.
2. In elementary schools there are usually many arrangements of furniture. Each room must be studied to determine the most efficient method of sweeping. Where there is sufficient space to accommodate classroom furniture comfortably, the problem isn't too difficult. However, where desks are small or only chairs are used, the furniture must be moved to allow sweeping. It is important that the furniture is replaced in the position the teacher requires.

Chalkboards, Erasers and Chalk Trays

Chalkboards and all related items are important and necessary installations, but are a constant source of dust. Chalkboards must be cleaned by a method that least agitates or distributes chalk dust. Chalk trays must be cleaned frequently in order to prevent loose dust from being distributed throughout the room. Erasers and equipment for cleaning must be kept as free from dust as possible. Consistent effort must be made in keeping down the dust problem.

Chalk and Chalkboard Information

There are as many as 70 different brands of chalkboards on the market today. Fifteen years ago there were only three backings for chalkboards: slate, wood pulp, and asbestos. Today, everything from paper that comes in rolls, to glass, plastic, and steel with a coat of paint are in use.

Basically, the most important thing about a chalkboard is its surface. This surface when viewed under a microscope, is a series of "hills' and valleys". This provides the "bite" that wears away the chalk. It should be rough enough to make a mark, smooth enough to erase, and yet prevent shine or glare.

Before chalk is applied, water will do no damage to a good grade chalkboard. Nevertheless, all chalk contains a binder or glue to bind the particles of chalk dust together. One or two washings will not produce a noticeable effect. Washing is not recommended, but if washing becomes necessary as an emergency measure, it should be done strictly in accordance with the manufacturer's specifications. Over a period of time, the water continues to "set" these glue particles in the "valleys" until the "bite" is gone. To prevent this condition, dry cleaning is recommended using a cloth, towel, chamois or synthetic eraser.

To break in a new or washed chalkboard, a piece of chalk may be rubbed on the board by holding sideways. This is then erased and smoothed to leave a thin film of chalk dust on the board.

White Chalk

First grade chalk contains 95 percent or more pure English precipitated whiting, usually from the White Cliffs of Dover. It makes excellent marks, but more important, its marks are easy to remove.

Second grade chalk is made of 50 percent domestic whiting and 50 percent common clay. The clay content buries itself in the valleys, sticks there, and leaves ghost marks because it is difficult to remove.

Third grade chalk is tapered in form and full of air bubbles. It often has hard spots as a result of drying. These hard spots may scratch the board surface, causing permanent damage.

Colored Chalk

A common rule in some schools is to prohibit the use of colored chalk because the vast majority of colored chalk on the market, which is made for use on paper, damages board surfaces. Although manufacturers make a first grade colored chalk which would not be difficult to remove, the colors seem too light, and consequently, teachers prefer the brighter hued paper chalk. On a green or black chalkboard, however, the lighter pastel shades will show up better than the more brilliant ones.

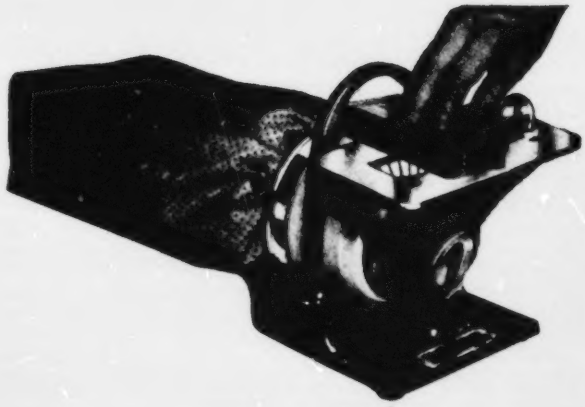
Chalkboard Cleaning

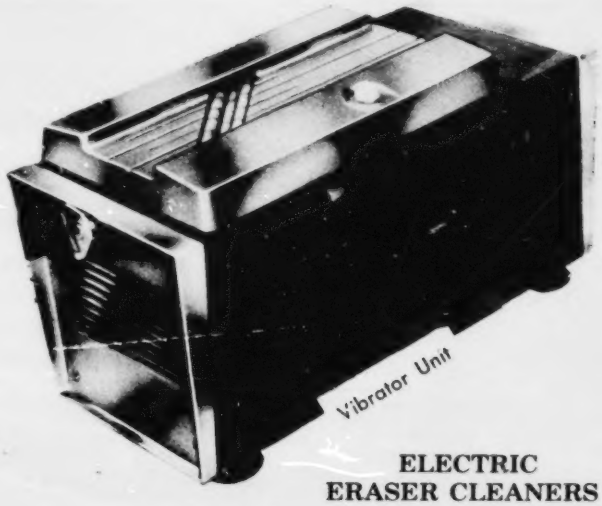
In general, chalkboards should be cleaned by custodians and not by persons unfamiliar with the different kinds of chalkboards and their construction. Custodians are expected to employ better methods and produce better results. How often chalkboards are to be cleaned depends upon the use to which they are subjected. In some cases they will need cleaning as often as once a day. The life of a chalkboard will depend to a great extent on how it is cleaned and cared for. Chalkboards should be cleaned before sweeping the classroom.

A dry chamois skin or soft cloth such as a bath towel is the best cleaning tool for chalkboards. Liquid preparations of any kind will damage the cutting surface of the chalkboard by filling in the cutting surface with the emulsified crayon dust. The chamois skin or soft cloth used for cleaning purposes should not be washed. The dust picked up from the board surface should be removed by shaking only. Chemically treated cloths, whether dry or damp, should not be used to clean chalkboards.

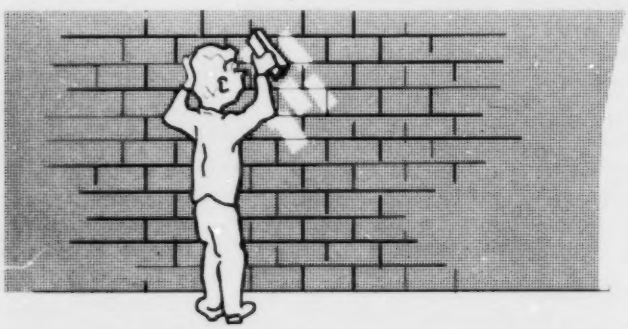
Eraser Cleaning

It is essential in keeping chalkboards clean to use clean chalkboard erasers at all times. The eraser enables the user of the board to clean the surface before it is used again. To clean an eraser correctly, all of the impregnated dust must be removed from the felt and from between the felt strips. This is also applicable to the synthetic chamois combination erasers. Best results in cleaning are obtained by use of vacuum.





ELECTRIC ERASER CLEANERS



THIS IS A NO-NO-

Cleaning Chalk Trays

Chalk trays should be cleaned often to prevent the crayon dust from blowing around the room and soiling clothes of persons in contact with the tray. The cleaning may be done with a dry cloth or a vacuum cleaner with brush. The same cloth used on the board surface cleaning should not be used in cleaning the trays, as the boards may become streaked. A dust pan held under the tray while the cleaning is being done will keep the dust from the floor, or a vacuum machine may be used.

Resurfacing Chalkboards

New surfaces can be painted upon chalkboards of the composition type. It is only necessary to sand lightly and clean thoroughly the old finish before applying the new surface material. The directions for application are generally given by the manufacturer of the material. Slate boards may have a new cutting surface ground upon them.

Methods for Cleaning Special Areas

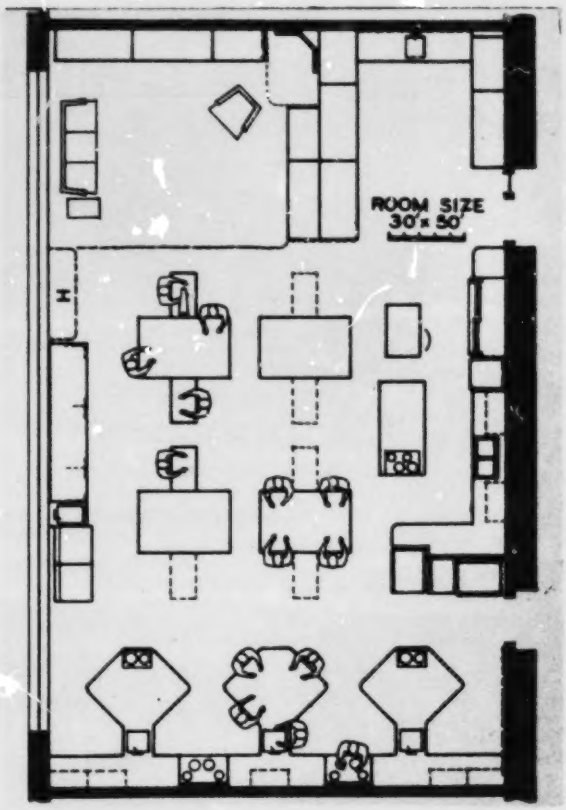
Homemaking Classrooms

The modern classrooms for teaching cooking usually follow a standard design. Individual kitchens are spaced along the inside wall where there are no windows. These kitchens are complete units with ranges, working counters, sinks, built-ins and cabinets for storage of all of the kitchen utensils, dishes, cutlery and supplies.

On the window side of the room are electric washers and dryers, counters with built-in sinks and

storage space below the counter. Student desks and chairs are in the center of the room occupying the full length of the room. The teacher's desk, filing cabinets and storage cabinets are usually in the front near the entrance door. The chalkboard is usually located near the teacher's desk.

Table setting, sewing, clothes designing and fitting areas are often included in this or an adjoining room. These areas will be suitably equipped for this phase of teaching.



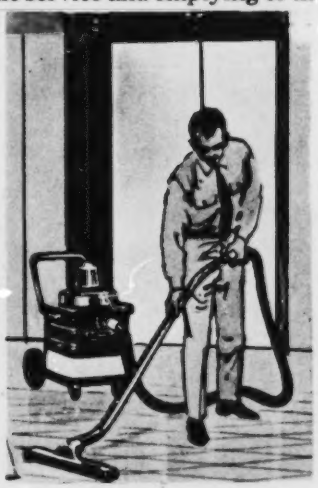
Steps of Cleaning:

1. Assuming that the occupants clean the sinks, appliances and equipment as part of the curriculum, the procedure of sweeping will be initially the same as for other classrooms. Pencil sharpeners and waste baskets shall be emptied first. A 24-inch swivel-type sweeping mop will be most functional here, because of the furniture placement.
2. From the far end of the room, sweep the kitchen areas first, working toward the front of the room and into the hallway. In the class area, start on the window side, work back and forth the length of the room, bringing the sweepings into the hallway, where accumulations are picked up with a dust pan and brush and deposited into the portable trash box.
3. Special attention may be necessary to spot mop where spillage of food causes soiled spots. This may be done either before or after sweeping. At least once a week the entire kitchen area and other floor space in the room must be wet mopped.
4. Clean glass—windows, door glass, mirrors, showcases, not done by students.
5. Dust at the time scheduled for all classrooms and special areas.
6. Carpeted area: cleaning will be described in a later paragraph.

Industrial Arts—Woodshop Area

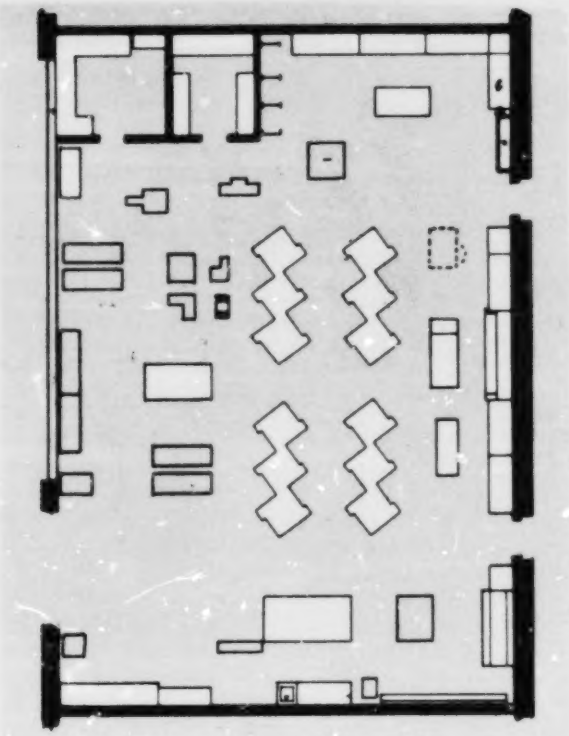
Woodshops present a special dust problem. Wood dust settling on everything in the room necessitates the use of a good vacuum cleaner with proper attachments. In most cases, vacuum cleaners are being provided in woodshops. When considerable sawing and sanding is done, the custodian will need to use the vacuum cleaner all over the classroom at least once. A second dusting may be necessary in order to pick up all of the dust deposits. Frequent removal of dust from the container in the vacuum cleaner should be done to insure machine efficiency.

Increasingly, woodwork shops are being equipped with dust collector systems. In some areas it is required by code; however, this does not detract from the regular cleaning steps. The dust collector system requires periodic service and emptying of the collector receptacle.



Steps of Cleaning:

1. Assuming that the occupants clean the machinery and equipment as part of the curriculum: empty pencil sharpeners, waste container, sawdust containers, and remove sawdust from bases of saws, planers, and other machines.
2. Using the vacuum, work from the far side of the room toward the door, following a planned pattern of operation.
3. Light fixtures, walls, furniture, etc., must be cleaned daily. Dust impairs the lighting and is dangerously explosive. Lights originally suspended from the ceiling may have been replaced by dustproof fluorescent lights recessed into the ceilings. The cool tubes of such lights cause little air suction in the unit. Keep all other lights and fixtures free of dust and grease.



Industrial Arts—Metal Shop Areas

Metal shops do not present such a dust problem as woodshops. The procedure of cleaning the metal shop and classroom is similar to regular classroom floor cleaning and dusting.

Steps of Cleaning:

1. Assuming that the occupants clean the equipment as part of the curriculum, use a suitable size sweeping mop or pushbroom. Empty pencil sharpeners and waste containers.
2. Start sweeping from the far side of the room and work toward the door and hallway.
3. The furniture distribution presents no problem of accessibility. Where chairs are used at the student tables, replace them in position after sweeping. Grease on the floor should be removed. Consult the Stain Removal Chart for methods and materials.
4. Dust at a suitable time.

Industrial Arts—Drafting Classroom Area

The drafting classroom presents no special sweeping or cleaning problems. In most cases, the student desks are metal with drawers and tilting tops. Metal stools generally provided may fasten to the bottom of the table top by means of a frame into which the stool top slides.

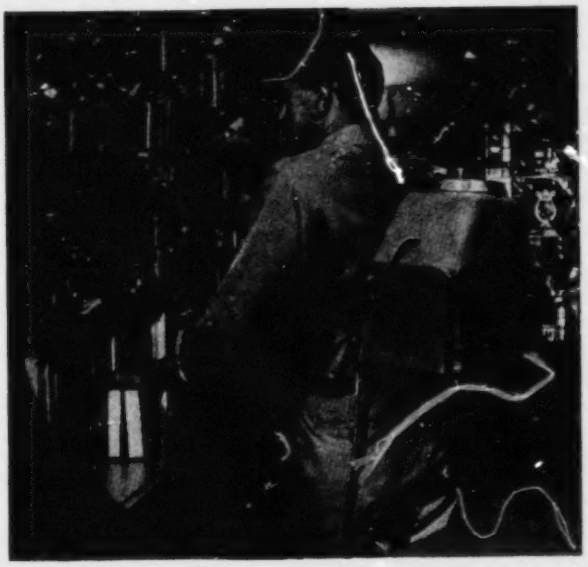
The cleaning procedure is the same as for a conventional classroom.

Steps of Cleaning:

1. Empty pencil sharpeners and waste paper containers and replace in their positions.
2. Sweep from the farthest side of the room, moving back and forth through the aisles and under the desks until the floor has been completely swept. Move sweepings into the hallway for collection.
3. Dust after shop areas have been swept.

Library Area

Smooth floor, resilent tile, wood, etc. Libraries are generally large and have rooms adjacent to the main section. They sometimes are crowded with furniture and book stacks. Normally, some study is required to develop a standard cleaning procedure.



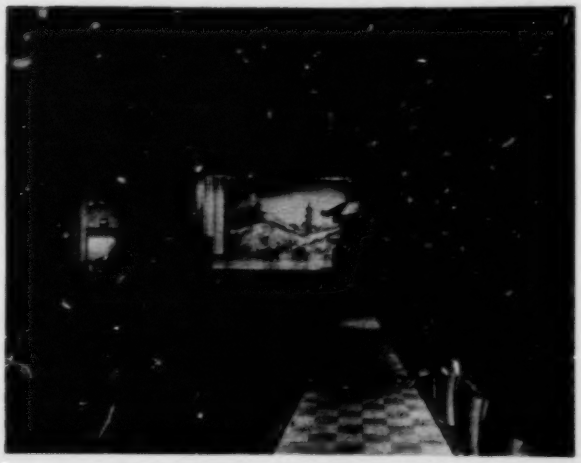
Steps of Cleaning:

1. Empty pencil sharpeners and waste containers.
2. Start sweeping at the window side, working back and forth through the aisles and under tables. Always work toward the exit doors. There may be as many as four doors leading to the hallway from the library, making it easier to move dust out of the room.
3. Where there are adjacent rooms, sweep to the closest door.
4. Library dusting demands special attention. Dust spread must be kept to a minimum. It is imperative that dusting be done daily, completely and thoroughly.
5. Cleaning carpeted areas is described in a later paragraph.

Auditorium Area

Junior and senior high school auditoriums usually have a sloping floor with seats permanently

attached to it. There are usually three or four section of seats with aisles between, and a built-in stage equipped with standard curtains and backdrops. There may be metal folding chairs which are stacked in chair racks when not in use. There will be a lectern or two, and a piano. If chairs occupy the stage daily, they may be either put in the place of storage before sweeping or moved about and replaced where desired by the teacher using the stage area. Dressing rooms, either adjacent or located on the second floor, should be checked and cleaned whenever they have been used for some activity.



Steps of Cleaning:

1. Begin sweeping one section of the seat area nearest the side wall. Use a 12-inch sweeping mop, working back and forth between and under the seats, leaving the sweepings in the aisle. Use a vacuum cleaner whenever one is available. It is much easier and more efficient to clean under seats and especially around the chair leg supports with a vacuum. Complete the auditorium floor in this manner.
2. If vacuum cleaners are not used, the sweepings must be removed from the aisles by sweeping them to the front of the auditorium.
3. The open area between the front of the seating area and the stage is easily swept into the hallway, since there are no obstructions.
4. Sweep the stage area with a suitable size dust mop. Work back and forth the width of the stage toward the exit door to the hallway. Pick up the sweepings and dust area when dusting operation is scheduled.

Multipurpose Rooms

These areas are used variously as auditoriums, gyms, and cafeterias or dining rooms. Sometimes there is a fixed stage or a portable stage arrangement which folds against the wall on one end of the room. If folding chairs are used, they may either be placed in storage, or moved as sweeping is done. Chair storage trucks are a convenience and timesaver in handling and storing folding chairs.

Steps of Cleaning:

1. Either remove chairs to facilitate the sweeping process or, if chairs are not removed, use a 12-inch dust mop, sweeping back and forth between the rows of chairs.
2. Sweep in front of room and proceed toward the rear of the room. Move chairs to allow full coverage of the floor.
3. Replace chairs as you move along, or keep pushing chairs toward the front of the room until sweeping is completed; then place chairs in the position desired by the teachers or principal.
4. Dust when dusting is scheduled.

Cleaning the Cafeteria and Kitchen

There should be no compromise in cleaning and sanitizing this area of the school. The kitchen and lunchroom area of the building must be kept spotless and germ-free. Superficial cleaning cannot be tolerated in these areas. Floors, walls, ceilings, tabletops, benches, kitchen counters, etc., must be kept strictly sanitary. Any trash or garbage containers in the area must be thoroughly cleaned daily, sanitized, and lined. Use the right tools, sanitizers and techniques in daily application. A clean and attractive lunchroom creates the environment for meal enjoyment and relaxation. Kitchens and lunchrooms provide breeding places for germs, thus requiring special attention to cleanliness and sanitation.

Equipment

The cleaning equipment for cafeterias and kitchens is the same as for other areas of the building—a suitable size sweeping mop, wet mops, mop buckets, mop wringer, detergent spray bottle, sponge, cloths or towel, dust cloth, dusting mop.

Steps of Cleaning:

1. The daily work should be planned to allow these rooms to be cleaned immediately after use. Usually the cafeteria crew will clean the tables and chairs, but if this work is assigned to the custodian, the tables should be washed with a good cleaner and sanitizer. If the tables are used for other purposes during the day, they should be washed again before the next lunch period.
2. Pick up all spilled foods before sweeping. To prevent sweeping through floor areas where food has been spilled, thus causing a smear, place a chair over the spot to mark it for spot mopping. Spot mopping follows sweeping; complete mopping once a week.
3. Wash the garbage cans each day and line with papers. Where disposable vinyl or other types of liners are used the washing of the cans might be

reduced to once or twice per week, and the lining with paper not be necessary.

4. The kitchen should be cleaned immediately after the cooks complete their work, special attention being given to the kitchen hood, the filters, the walls, and the floor mopped daily. Check the hood once a week, cleaning as often as is necessary, never allowing grease to accumulate. Clean the stoves after cleaning the hood since dust and grease usually fall on the stove top during the hood cleaning process. A solution of household ammonia, or prepared grease-dissolving cleaner, is effective for stoves and hoods. Clean the filters over stoves and grills once a week.
5. Kitchen walls should be washed frequently to prevent an accumulation of grease and smoke. Thoroughly clean and mop the kitchen floor each day to prevent spilled food from hardening on the floor.
6. Walk-in refrigerators are subject to the growth of mold or fungus and must be cleaned with a residual anti-mold or anti-fungus germicide detergent. Special paints may solve this problem.

Custodian Cafeteria Responsibilities

1. The daily removing of the garbage cans from the cafeteria, disposing of the waste, washing and airing the cans, lining with paper and returning them to the cafeteria.
2. The cleaning of the floors of the dining room and kitchen daily; the mopping of the kitchen floors daily; spot mopping of the dining room daily as required.
3. The putting up and taking down of tables and chairs as may be required in auditorium-cafeterias or gymnasium-cafeterias.
4. The cleaning of hoods as *needed.*
5. Vacation cleaning procedures shall apply to the dining room and kitchen as to the rest of the building.
6. Dispensers for paper towels and soap shall be kept filled at all times.
7. Assisting the cafeteria manager with heavy lifting when needed.
8. Maintaining the hot water supply at needed temperatures. Turning the dishwashing booster heaters ON and OFF BEFORE and AFTER use. These booster heaters must not be left on overnight.
9. Cleaning of cafeteria tables and chairs following an extra activity at night, provided they have been used in serving food or beverages.

Gymnasium Area

These areas are large and free of obstructions, usually having folding bleachers on two sides. Larger gyms have built-in bleachers which do not obstruct the playing space.

Steps of Cleaning:

1. Use a suitable size sweeping mop. It is practical to use a large mop, 36", 48" or 60".
2. Sweep on one side of the gym moving the full length of the floor and back to the hallway side of the area. Continue this process until the floor has been completed.
3. Check the space below the bleachers. As these are used often for students who bring sack lunches, parts of the lunch and paper may be dropped below. Remove with a suitable size push broom.
4. When bleachers are drawn out at lunch time, they must be swept with a suitable size dust mop before they are folded back against the walls.
5. Once a week or more often, if necessary, bleachers should be damp mopped to remove spillage of liquids and foods.
6. Sweep trash from under the bleachers toward the hallway exit with the sweepings from the main gym floor.
7. Pick up and remove sweepings from the area.
8. Dust the bleachers when dusting schedule is put into operation.

Cleaning Shower and Locker Rooms

There should be no compromise in cleaning and sanitizing this area of the school. As moisture provides conditions for growth of fungus and germs which can be conveyed to people, shower and locker rooms need to be cleaned and disinfected daily with proper equipment and chemicals. Hazards which might bring about injury must be removed. Floors must be cleaned thoroughly to avoid slippery conditions.

The walls and ceilings of shower rooms are usually constructed of non-absorbent material such as cement, plaster or glazed tile. When the walls and ceilings are made of porous material, it is desirable to paint them a light color with a good quality moisture-resistant paint, synthetic enamel, or plastic glaze, taking care to keep the lower parts of the wall as smooth as possible in order to facilitate cleaning.

Procedures

In daily cleaning, locker room floors should be swept and all toilets, urinals, hand basins and benches should be scrubbed with a good disinfectant. All shower room floors, and floors that students walk on barefooted, should be scrubbed with a good disinfectant daily. The shower walls should be washed at least once a week with a solution of warm water and a germicidal, fungicidal detergent.

The floors, walls, ceilings and plumbing fixtures in shower rooms are subject to a build-up from hard water, soil, soap curds, body oils, fungus and algae which, if allowed to remain over a period of time, become difficult to remove. There are some so-called disinfectant germicides which contribute further to this build-up. The build-up provides further problems in removing germs and bacteria. Fungus formation becomes quite visible when the grout mortar joints in tile turn brown or black, or when brown or black spots appear on the face of the tile or on other surfaces, and do not readily wash off.

Available from dependable suppliers are several certified residual disinfectant detergent germicides which are used in solution with cold water in a spray or applied by a sponge or mop. When used in a regular program, they will remove soil, soap curds, body oils, scum, algae, and fungus from the ceilings, walls, floor and shower fixtures without the use of abrasives or scrub brushes, and provide the necessary disinfectant application. Continued use of the material in proper dilution and on a regular schedule will prevent reoccurrence of the objectionable conditions mentioned above. Most athletic directors and instructors will endorse such a program and have confidence that the custodial staff is adequately maintaining these critical areas. This is a single operation leaving an active residual and requires no rinsing treatment. This material should also be used in the locker and dressing rooms for cleaning and sanitizing the lockers, benches, floors and walls. The disinfectant, detergent, germicidal material is also suitable for use in toilet rooms for bowls, urinals, basins, floors, walls, partitions, etc. It is effective and recommended for cleaning and sanitizing plastic-covered mats in the exercise rooms and other equipment, walls and floors.

Avoid the use of scouring powders, as they are difficult to rinse. Abrasives, steel wool, acid cleaners and strong alkaline cleaners also should be avoided. Substitute specially designed nylon pads for scouring powders, abrasives and steel wool.

Avoid the use of mats or wood gratings in shower or locker rooms, for they are hazardous and present a problem in cleaning and sanitizing.

Keep floor drains in shower and locker rooms free of gum, paper, and other debris, to prevent clogging the drain trap. Repair leaky valves, liquid soap dispensers, check frequently for clogging; dilute the concentrated liquid soap according to directions—it may prevent the soap congealing and plugging the dispenser.

Shower Heads

The shower heads should be inspected by the custodian at least once a week and cleaned if necessary. If the shower heads are modern types, they can be readily cleaned while in place by loosening the tooth-edged disks on the face. If the heads are the older type, consisting of an inner screen and a perforated face they should be removed and cleaned thoroughly. Punch the holes with a fine piano wire of the proper size, then replace the head. The work can be facilitated by keeping one or more extra shower heads on hand. Remove the clogged head and replace with a spare head at once, then clean the clogged one at a more convenient time.

Cleaning Rest Rooms, Toilet Bowls, and the Control of Odors

There should be no compromise in cleaning and sanitizing this area of the building. The cleaning of rest rooms is often considered the most important job of building maintenance. Rest rooms should receive more thought and attention than any other area in a school building because of the nature of the personal service they provide. No other item of building maintenance receives closer inspection by the general public and the occupants than do the rest room areas. Here is set the pattern of cleanliness for the entire building. Poor rest room conditions reflect on housekeeping generally. The proper equipment and techniques must be utilized daily. By using proper germicidal detergents and techniques, a rest room needs no strong disinfeetants to cover up odors. There is no lasting odor in a rest room that is

consistently and properly cleaned. Rest rooms should be cleaned daily or more often if a check shows the need. Anything less than daily cleaning should not be considered. Proper cleaning will not only maintain the appearance of the room, but will prolong the life of the fixtures and finishes. If cleaning schedules are used, these tasks will become much easier.

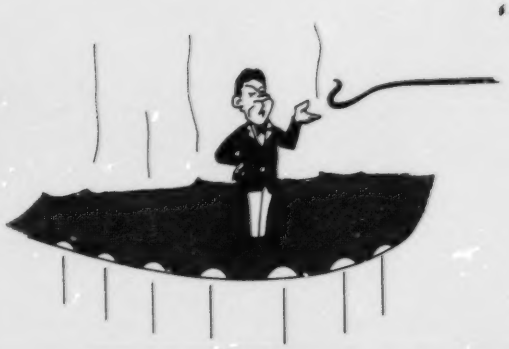
Cleaning Schedules and Methods

A. **DAILY CLEANING**

Some of the items listed should receive attention frequently during the day.

1. Empty the towel and sanitary receptacles into a canvas bag or other container used for this purpose.
2. Sweep the floor toward the door with a push broom. Pick up the sweepings in dust pan and empty into a container.
3. Flush the toilets and urinals.
4. Clean the wash basins and faucets with a properly diluted solution of certified germicidal detergent with a sponge, soft cloth or spray bottle. Dried deposits of soap or stubborn soil can be easily removed by rubbing with one of the new type soft white nylon abrasive pads. Rinse and wipe dry with paper towels or soft, clean cloth. The sides, under-parts, trap and shut off valves should be cleaned with the same solution. Apply with a sponge or cloth and wipe dry.
5. Clean the toilet bowls, inside and out, using the same solution and giving particular attention to the area under the rim. Check by using a mirror. To clean this area, a bowl swab or brush is generally used. If the flush holes under the rim are plugged, they should be cleaned and, for this purpose, a nylon coffee urn brush of proper size is ideal. After cleaning, wipe the outside and back of the bowl and dry with cloth or paper towel. Thoroughly clean the top and bottom of the toilet seat and cover. Wipe dry and leave in the upright position. Clean and dry the flush handle, hinges, and other metal parts, as well as the rubber bumpers.
6. When cleaning the urinals, use the germicidal detergent solution liberally and do a thorough job, giving added attention to the areas under the urinal lips and the floor area directly in front and to the side of the urinals. The underlip can be cleaned with the swab or brush. Follow by using the white nylon pad if necessary. The importance of thoroughly cleaning this area cannot be over-emphasized. Neglect will soon allow a deposit of uric acid crystals to accumulate. This is usually the cause of the offensive odors from urinals. Once a week or more often, depending on traffic, the under part of the toilet bowl rims and under part of the urinal lips should be cleaned with a good bowl cleaner (modified acid type) applied with a bowl swab. At the same time, pour a cupful of this cleaner into each of the urinals and allow it to remain for a few minutes, which will help keep the traps clean and free from odor. It is well to emphasize that acid type cleaners should never be used on wash basins or drinking fountains, as they can cause severe damage. Bowl cleaners are for use in toilet bowls and urinals only.
7. Clean, and if needed, fill all towel, soap, toilet tissue and sanitary napkin dispensers.
8. Clean mirrors with a sponge or cloth and clear water. Dry thoroughly with paper towels. Clean windows in same manner, and do not neglect the sill.

The average custodial employee receives far too little instruction in restroom cleaning. Demonstration should be followed by having trainee do the work under observation.



THIS IS NOT AMATEUR HOUR-

9. Spot clean walls and partitions with germicidal detergent solution applied with a sponge, cloth or spray bottle, and be sure not to neglect the top of the partitions.
10. Ventilator grilles should be cleaned as needed with a counter brush.
11. Light fixtures should be cleaned by wiping with a soft, dry cloth. They should be thoroughly washed, inside and out, when burned-out bulbs are replaced.
12. Clean the entire floor area by mopping with germicidal detergent solution, giving extra attention to the areas in front and to the sides of the urinals and around and behind the toilet bowls.

Inspect your work and remember that areas neglected will soon cause problems and complaints. A properly maintained rest room will be completely free of any lasting odors.

Some custodians prefer to use scouring powders and disinfectants instead of germicidal detergents and soft nylon scouring pads, but actual tests have shown the germicidal detergent-pad method is much less time-consuming and less damaging to chrome enamel and vitreous fixtures, leaves no abrasive powder deposits behind faucets and fixtures, does not build film on the floors, and generally gives better protection to the user against infection. The nylon pads recommended are especially made for this purpose. Harsh abrasive pads should not be used.

SERVICE PERSONNEL COMPLETELY CHECK CONDITION OF FIXTURES

B. **WEEKLY CLEANING**

Wash walls and partitions using a tested sanitizer or disinfectant. Only the wainscot or lower half of the walls are washed every week. A portion of wall space may be washed each day so that the room can be finished by the end of the week. Do the necessary spot cleaning daily. Clean radiators, air supply, and exhaust louvers.

C. **MONTHLY CLEANING**

Check the upper portion of the walls. Look for cobwebs, dirt marks, etc., and remove. Check under lavatories. Quite often soap and water will run down the edge of the fixture and collect underneath. Check the waste lines. They will become dusty and sometimes water will combine with the dust to make filth.

D. **TWICE A YEAR OR AS OFTEN AS NECESSARY**

Dust upper halves of the rooms. It may be necessary to wipe this section with a damp rag or sponge. Dust overhead waste lines if they are exposed. Clean lights and fixtures.

E. **ONCE A YEAR OR AS OFTEN AS NECESSARY**

The entire area should receive a thorough cleaning. Floors should be scrubbed, walls washed, partitions washed, lights and fixtures completely cleaned. Painting should be done at this time. Rest room areas should be painted as often as necessary for sanitary purposes.

Porous fibers and ceramic tile floors with grouted joints should be sealed with a material designed for this purpose. This is especially critical adjacent to toilet bowls and urinals.

Things to Remember

The more "homelike" we make our toilet rooms, the more careful the user will be.

Make the toilet rooms light and bright so the user can see that someone is taking care of that area.

Experiments prove that the clean toilet and rest room will receive the best attention and courtesy of the user.

Plan your method for cleaning rest rooms and facilities.

Care of Toilet Bowls

The care of toilet bowls can be divided into seven operations.

A. **SEAT AND COVER**

By rough treatment, the toilet seats may become cracked, chipped and pitted. Lack of proper maintenance procedures is often the cause of such rough treatment. Cracks and pits in the seat provide excellent locations for the growth of bacteria. Such seats should be replaced with new ones.

B. **THE TOILET RIM**

The rim of the toilet must be cleaned frequently. Precautions should be taken against damage, such as striking pails against the rim while emptying, screws of worn bumpers scratching and discoloring the rim, or other rough treatment which provides additional breeding places for germs. Replace worn seat bumpers as soon as they are discovered.

If the top rim of a toilet is dirty, the underpart of the rim will be in very bad condition. It can be checked by using a mirror. The uncared-for portion of the rim is the chief starting point of stains and odors. Encrustations of minerals and uric salts plug the flush holes and prevent complete flushing. Daily brushing under the rim with a good cleaner and disinfectant is necessary to prevent the accumulation of filth. A scratched surface causes dirt to collect and odors to occur.

C. **METAL PARTS AND RUBBER BUMPERS**

Metal parts of the toilet should be included in the cleaning program. Dirty hinges, flush handles, pipes, screws and bolts cause corrosion and take away the beauty of a clean toilet. Concealed places between the hinges, around dirty floor bolts, etc., also provide breeding places for bacteria.

D. **THE TOILET BOWL**

In some areas toilet bowls become stained rapidly, due to the mineral hardness of the water. Many good cleaners are now on the market to control this condition. Some of the more recent products are made with a minimum of acid content and are therefore much easier to handle.

The outside of the bowl must also receive its daily cleaning, with special care being given the area at the back of the bowl which is often neglected.

E. **FLUSH TANK**

A dirty flush tank is very often the cause of odors. Tanks should be cleaned in the same manner as the inside of the bowl.

F. **PASSAGE AND TRAP**

The passage and trap from a toilet or urinal, if not cleaned, can be the beginning of plumbing troubles, and also a source of odors. Harsh acting cleaners are sometimes necessary to remove encrustations in this area, but once cleaned they will be easy to maintain. *Do not use harsh cleaners without first testing them for effect on metal.* Read directions carefully.

G. **FLOOR AREA AROUND THE BOWL**

The final step in every toilet cleaning operation should be the cleaning and drying of the floor around the base of the bowl. Porous flooring should be properly sealed before odor causing soil has a chance to penetrate into the floor. Use hot water generously and dry out. *Never* use hot water on resilient tile floors. Be sure the base of the bowl has a proper type seal between it and the floor.

Care of Urinals

Basically, the applicable steps listed for the care of toilet bowls should be applied in cleaning urinals.

Control of Odor

A clean toilet area prevents the growth of bacteria the primary cause of odors, and eliminates the encrustations that might form, causing lingering odors. The urinals in a rest room will collect odors much more quickly than a toilet bowl, due to infrequent flushing and the uric salts that are formed, thus necessitating a more rigid cleaning schedule. Automatic flushing devices are recommended.

The absence of odor in a rest room does not eliminate the need for a good disinfectant that will kill and control the spread of bacteria.

Hallways or Corridors

The proper cleaning of corridors is one of the most important operations in cleaning floors in a building. The hallways are the first area to pick up dust from traffic. Walk-on entrance mats may stop the spread of dust. When hallways are swept at least twice in the morning and twice in the afternoon, classroom floors will not be so serious a dust problem. The best time to sweep the hallway is after the students are settled in their classes.

Use a suitable size sweeping mop 36", 48" or 60", or, if extreme conditions exist, use a suitable size pushbroom up to 36" with sweeping compound. Of course all hallways must be swept during the evening cleaning. Walls above the wainscoting should be dusted once per week if necessary. A long-handled brush should be used. Keep wainscoting clean and free of marks. Clean door glass.

Cleaning Stairways

The condition of stairways as well as floors convey to the visitor and persons who use the stairways daily the quality of housekeeping the custodian performs. Steps must be kept clean and safe from slippage. Specific tools must be used in the operation to keep stairways in the best condition.

Tools and Materials Required

One treated sweeping mop of suitable size, counter brush, dust pan, refuse container, one floor brush of suitable size, or a vacuum cleaner are needed.

Information

Stairs may be cleaned with a portable vacuum cleaner, a small floor brush and sweeping compound, or a treated dust mop. To see all parts of the step, it is advisable to stand on the second stair tread below the one being cleaned.

Operational Steps Using Compound

1. Place a small quantity of sweeping compound on the first and second steps, stand with feet a little apart on the third step down. Hold the brush-block parallel to the wall on the right side of the first step and pull the dirt out of the corner onto the step below.
2. Place the floor brush in the right corner of the first step again. With a slight turn of the body to the left, pull the floor brush toward, but not into, the left corner, permitting the sweeping to drop to the step below.
3. Place the floor brush parallel to the tread in the left corner of the first step and pull the sweepings forward so that they fall on the second step.

Stairs and platforms are dry-cleaned with light 12" floor machine and bassine scrub brush. Floor finish coating is sprayed on stairway lightly, with water from pint spray bottle (seen in man's hip pocket) before buffing.

4. Step down to the foruth step; place the floor brush parallel to the tread in the left corner of the second step and pull the sweepings forward so that they fall on the third step.
5. Sweep the remainder of the second step toward the right corner, turning the body slightly to the right and pull the sweepings on the third step before reaching the left corner.
6. Place the floor brush parallel to the wall in the right corner of the second step and sweep the dirt out of the corner onto the third step.
7. Step down and repeat the operations in steps 2 to 6 until all the steps have been swept.
8. Pick up the sweepings and place in refuse container.
9. Don't forget to clean or dust the handrails.

Operational Steps Using a Sweeping Mop

Basically, the steps of cleaning are the same as those with a compound. Clean the corners with a counter brush.

Rapid Sweeping of Stairs Without Dust

An alternate method, nearly dustless, is to use a backpack vacuum, which is very satisfactory as far as actual cleaning is concerned.

Cleaning Office Area

Administration Area—Office: Smooth Floors, Resilient Tile, Wood, Etc.

The office area usually consists of the following rooms: the principal's room; the vice-principal's room; main office section, with a limited waiting area separated from secretaries' section by a counter; a mimeograph room; a supply room; and a student service room divided by a counter. This type of office area is typical in high schools and junior high schools. Elementary offices vary as to type of space and procedure of handling pupil traffic. There is, however, some similarity, and the procedure of sweeping these areas is also similar.

Steps of Cleaning

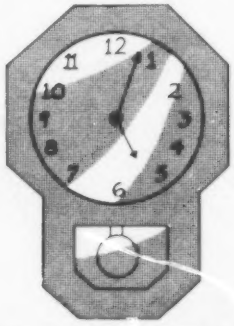
1. Empty pencil sharpeners and all waste paper containers. Because of the small working area, use a twenty-four inch swivel-type dust mop for sweeping.
2. Clean all rooms adjacent to the main office first, starting at either end of the area. If there are exit doors in the room, move sweepings out of the door into the hallway. Where there are no exit doors in the rooms, move the sweepings to the main section and out of the nearest exit door into the hallway.
3. After all adjacent rooms have been swept, sweep the main section starting at the farthest end toward the exit door.
4. Finally, sweep the waiting room space ahead of the service counter starting at the counter and moving back and forth the length of the room.

Move the sweepings out of the door closest to the last round made with the dust mop.

5. The room may be dusted at the scheduled time for dusting classrooms and other areas. Dusting time varies with different schools, but it is important that dusting this area be done after the dust has settled. Dusting may be done during the day when necessary. When dusting the desks of administrators and secretaries, do not rearrange or destroy any materials on the desk. It is good practice to first ask the administrator if the desk should be dusted when not cleared. Rest rooms in this area may be cleaned when the schedule is best suited to the cleaning of all rest room sections.
6. Carpeted area: cleaning described in a later paragraph.

Dusting Rooms and Furnishings

Dust in any form is a host to germs. The utmost efforts should be made to prevent dust from entering the building in the first place, but it cannot be done to perfection, because there are so many ways dust is produced.



DUST CAN'T TELL TIME

Dust is formed from particles entering the building from outdoors, or lint from clothes. Dust settles on walls, floors, light fixtures, and all types of furniture. Usually the floors are the heaviest contributors to the movement of dust; therefore, the hallways must be frequently dustmopped during the day. This prevents dust from being tracked into the classrooms. If dust does settle in the building, it must be removed daily.

To eliminate dust is to reduce possible infectious diseases. Good health through cleanliness must be the custodian's chief concern. The importance of dusting rooms and furniture cannot be overestimated, for dust irritates the respiratory tracts and may be the means of spreading disease. Well dusted and clean furniture not only improves the appearance of the building, but provides comfort for the occupants and proper conditions for their activities.

Remember, when dusting, that printed, typed or written material on an administrator's, secretary's or teacher's desk is the personal business of the person using the desk. Any material on a desk that is lifted for dusting should be replaced in the same position.

Procedures

After proper dusting, there should be practically no dust in the air. All dust will have been removed from the top, edges, corners, crevices, and under parts of chairs and tables. If there is any doubt, a white handkerchief test will show whether there is dust on the furniture or woodwork. Dusting should be done long enough after sweeping so that all of the dust in the air will have settled, and it should be done once each day, or more often, to avoid large accumulations.

In dusting furniture, dust one row at a time with only one dusting tool. Use a systematic back-and-forth motion on flat surfaces with clean and fluffy dusting cloths or mop. Dusting with a circular motion is likely to miss spaces and to flip dust into the air. Fixed dirt should be removed from furniture, preferably with the aid of warm water and neutral cleaner, although furniture polish containing cleaner may be used.

A towel is the best cleaning cloth. It has a gentle scouring action and retains the dirt as it is removed. After it has been washed, dry the furniture thoroughly with a cloth. One of the important parts of the job is to insure that all cleaning solution has been rinsed from the furniture after cleaning.

Tools for Dusting

Dusting efficiency depends on adequate tools and the manner in which they are used. Efficient tools make the job faster and easier. Some of the tools recommended are vacuum cleaners with attachments; chemically-treated dusters; dust mops; and soft clean dust cloths which have been properly treated. Use extreme caution when dusting so that the dust cloth does not come in contact with plaster or painted walls, leaving a dirty film.

Dusting tools do a good job only when they receive the proper care. A vacuum cleaner lags when

The simplest tasks can be expedited by training. Here the procedure is to lift objects with left hand, dust with right.

the dust bag is clogged with dirt. A soiled duster or dust mop is little better than none at all. A harsh, dirty dust cloth is worse than none, because it soils and scratches the surface. A few minutes a day spent in caring for tools will insure a good cleaning job.

Walls and Cobwebs

Walls should be dusted regularly and often. If they are neglected, they soon acquire a film of greasy dirt. This coating attracts and holds still more dust, which inevitably becomes embedded and difficult to remove.

Where dust and cobwebs are the only problems, walls may be dusted with the suction attachment of the vacuum cleaner. Other good tools are a long-handled soft wall brush of hair or lamb's wool, or a corn broom covered with a clean, soft cloth. When dusting walls, work should be done from the top down, with special attention given to high molding.

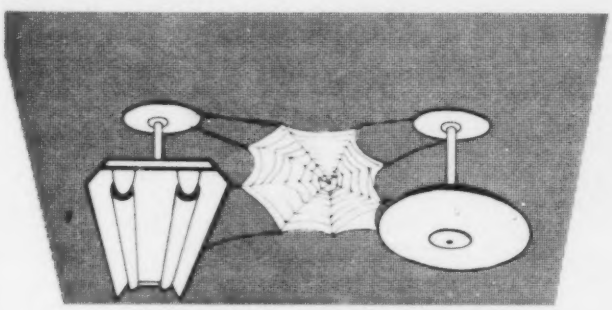
Use caution in dusting cobwebs. Whether they are spider webs or dust cobwebs, they should be removed with an upward lifting stroke to avoid streaking the walls. Cobwebs of any kind are sticky, and if pulled down against the wall they will leave a trail of dirt that is difficult to remove.

Radiators

Neglected radiators cause unsightly soil deposits on the surrounding walls. To avoid this condition, radiators should be cleaned often, especially when they are in use. A good method of cleaning radiators is to brush the coils of exposed radiators with a downward stroke, and collect the dust and dirt on damp newspapers beneath. If a vacuum cleaner is available, the crevice tool attachment can be used to gather the dust.

How To Get the Most Out of a Lighting System

Proper and efficient lighting of buildings, especially for students or for people who are doing close detail work, is necessary. Modern methods of lighting are rapidly being installed in old as well as new buildings, and the value of proper lighting is widely understood and accepted.



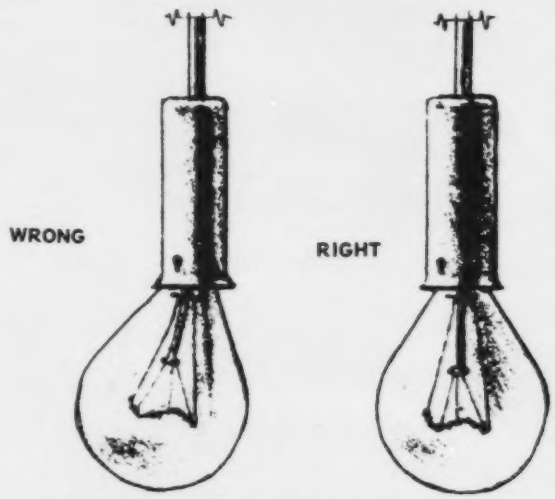
I'LL TAKE THE HIGH ROAD

Scientific methods of determining the correct amount of light are available from lighting specialists. After the lights have been installed, fixtures must be kept clean in order to retain their full power and efficiency. This cleaning must be done regularly and systematically. The following information indicates what is necessary to get the best performance from a lighting system.

Consider Lamp Replacement on a Group Basis

Neglected lamps that have outaged reduce illumination greatly. If burned-out lamps are not promptly replaced, illumination may drop to an unsafe level due to the fact that the rest of the lamps in the circuit have outaged. Arrange a lamp replacement schedule to assure that lamps in a hard-to-get-at location are replaced before they burn out. The groups should be broken by rooms, areas, circuits, or fixtures, and a list made to keep track of these groups and dates when they are changed.

Lamps removed on a replacement schedule should not be used again as their light output will be down 25 to 40 percent. When changing lamps, do not increase lamp wattage without expert advice. Remember to replace any burned-out or defective lamp daily.



Concentric Ring Fixtures

When relamping a concentric ring fixture, be sure to position the lamp correctly (see illustration above). Make sure there is clearance all the way around the lamp where it enters the socket housing. If the housing or husk touches the lamp, a weakness will develop due to the heat and the lamp may explode after a time. Be sure the lamp is positioned or centered. If you are unable to center the lamp correctly, make a repair request.

Rapid Start Fluorescent Fixtures

Correct positioning of rapid start lamps in the fixture is very important for their successful operation. There are only 3.5 volts across the two pins at each end of the lamp, and incorrect installation can

cause poor contact and failure of the lamp to operate or, if it does operate, the life of the lamp may be shortened considerably. The following diagrams will assist you in installing lamps.

Figure A shows an end view of the lamp. Notice the little moulded bumps at right angles to the pins.

Figure B illustrates the general appearance of the contact portion of the socket.

Figure A

Figure B

Figures C and D show the incorrect position of the lamp and relative position of the pins and raised bumps.

BOTH WRONG

Figure C

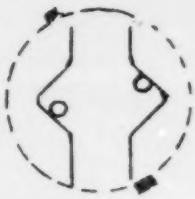
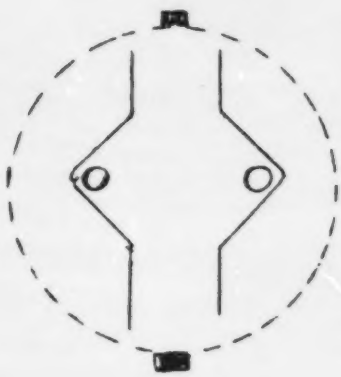


Figure D



RIGHT

Figure E

Figure E shows the correct position of the pins and the position of the raised bumps on the lamp. Make a visual check of the alignment of these bumps with the socket. When a lamp is apparently burned out, take both lamps out of the fixture and scrape the pins on the lamps and reinstall. If lamps still do not light, install one lamp at a time, as the two lamps are in series.

In schools that have both rapid start fixtures and regular fluorescent fixtures, care must be taken that regular fluorescent lamps are not installed in rapid start fixtures; however, rapid start lamps will operate successfully in regular fluorescent fixtures. Damage to the rapid start ballast will result if a regular fluorescent lamp is installed in a rapid start fixture.

Rapid start lamps may be distinguished from regular fluorescent lamps by the words "rapid start", which are etched on the glass.

Repairs and Regular Cleaning Schedules

Make repairs promptly. As a part of a "planned" lighting maintenance program, make all repairs as promptly as practicable. Even slight abnormalities should be noted and repaired promptly to prevent progressive deterioration of the lighting system. Every defect is a light and power robber. It might also be dangerous. Fix it now.

Establish regular cleaning schedules for fixtures, walls, ceilings, windows and skylights. It is a generally recognized fact that dirt absorbs and masks light. When we remove dirt, we improve visibility. No other feature of lighting maintenance pays more immediate dividends. It is frequently possible to plan lighting maintenance so that *cleaning and relamping can be done at the same time.* This is an ideal arrangement. Try to plan *your* lighting maintenance accordingly.

Colors Affect Lighting Efficiency

Use colors and finishes to advantage. The color, condition, and textures and finishes of floors, walls and ceilings affect lighting efficiency tremendously. Light colors and white give good results. They absorb only a small amount of light and will reflect the rest. Dark colors absorb most of the light. High gloss finishes afford good reflectance, but produce annoying glare. Flat or semi-gloss finishes are the most satisfactory, both for illumination and for personnel comfort.

Check the Service Rating of Your Lamps

Don't use "rough service" bulbs where they are not required. They are uneconomical and have a higher first cost. They usually cost about two and one-half times as much as standard lamps, and actually produce ten percent less light. Their use should be limited to "trouble-shooting" and similar purposes.

Cleaning Fluorescent Light Fixtures

Fluorescent lights are an efficient and economical method of lighting modern rooms or older buildings and rooms. Full efficiency of lighting can be attained only if these lights are properly maintained and cleaned. The right methods and tools must be used to provide the best performance of fixtures.

Experience has proven that the care of fluorescent lamps and fixtures can occupy an excessive

amount of the school custodian's time unless a regular program of cleaning and maintenance is followed. Generally, there are four reasons for scheduling a regular fluorescent light cleaning program. They are as follows:

MAXIMUM LUMEN OUTPUT. Maximum lumen output can be maintaned only if lamps and diffusers are free from smudges, foreign objects such as paper, rubber bands, etc., and dust rolls or dust film.

APPEARANCE. Dust rolls, smudges, foreign objects, etc., are especially noticeable in the diffusers and present a very unsightly appearance.

STARTING AND OPERATING EFFICIENCY. School custodians should understand that room lighting is carefully designed and calculated to provide adequate illumination which, of course, is not achieved unless *all* of the lights are clean and in good condition.

WORKING SCHEDULE. In large buildings such as school buildings, the custodian is confronted with an almost impossible task if it becomes necessary to clean all of the fluorescent lamps and fixtures in one or two days' time while school is in session. The obvious solution is to schedule a rotating light cleaning program so that each area or room will need servicing at regular staggered intervals, thus allowing for the custodian to plan a little fluorescent light cleaning along with the other daily cleaning of the building.

Four different methods of cleaning fluorescent lamps and fixtures are employed. Usually the best policy is to select the method best suited to the type of fixture, the building, and the locale. Each of the four methods is discussed as follows:

1. **WIPING WITH A DRY CLOTH.**

a. Tools and materials needed:
   (1) Step ladder or ladder truck
   (2) Dry dust cloth

b. INFORMATION: Wiping with a dry dust cloth is probably the poorest method one can employ. In passing the cloth over the hanger and fixture, the cloth usually snags on a rough piece of the metal and on protruding screws. Research has proven that passing a cloth over a plastic diffuser creates static electricity in the plastic, which causes the plastic to actually attract dust particles. Some of the newer plastics on the market are non-static, but unless one is sure the diffusers are of the non-static type material, it is obviously a poor policy to rub the diffusers with a cloth. Usually the tube itself develops a thin coat of dust that unites with moisture in the air causing it to harden, and wiping with a dry cloth will not have any cleaning effect to wipe away the dry surface dust.

2. **BLOWING.**

a. Tools and equipment needed:
   (1) Vacuum cleaner with hose extension and gooseneck attachment
   (2) Extension cord and grounding plug

b. INFORMATION AND METHOD: The refuse bag and filter are removed from the vacuum and the hose attached to the exhaust port of the vacuum cleaner. The gooseneck attachment and the extensions will permit the operator to simply walk along and direct the blast of air into and on the entire fixture so as to blow down the dust, papers, etc. This operation must be completed before any of the daily cleaning of the room is attempted and at least 45 minutes should be allowed to pass before any room cleaning is done in order that the dust may have a chance to settle. Blowing is one of the least employed methods of fluorescent light cleaning, because some wall and ceiling materials will be coated with dust. Also, nothing is accomplished in the way of checking the lamps and fixtures or removing the coating of dirt from the lamps. Only surface dust is blown away. It must be recognized, however, that some special areas, such as shops, may well be adapted to this method, since cleaning may be required as often as every day. Time is always a factor to consider in custodial maintenance, and blowing is a quick, even if not too efficient, method of cleaning fluorescent lights.

3. **VACUUM CLEANING.**

a. Tools and equipment needed:
   (1) Step ladder or ladder truck
   (2) Vacuum cleaner with duster
   (3) Extension cord with grounding plug
   (4) Sponge and bucket of mild detergent water
   (5) Piece of nylon pad

VACUUM LADDER AND TRUCK

b. INFORMATION AND METHOD: The vacuum cleaner is usually lashed on the tray of the step ladder so the operator can climb up the ladder, manuever the hose, and pass the duster brush over the hanger, fixture, and diffuser with facility. If the building is equipped with a ladder truck, the vacuum cleaner can simply be placed on the tray of the ladder truck. Removable diffusers are detached for cleaning. Before replacing the diffuser, the tubes are removed, cleaned with the vacuum, washed with the sponge contact tips

checked for corrosion and cleaned or polished with a small piece of nylon pad, then the tubes are replaced in the fixture. The vacuum cleaning method is the one most employed and recommended by experienced custodians to be employed during the regular school year, while school is in session.

4. **WASH AND DRIP DRY METHOD**

1. Tools and equipment needed:
   (1) Step ladder or ladder truck
   (2) Vacuum cleaner and duster brush attachment
   (3) Extension cord and grounding plug
   (4) Sponges or rags
   (5) Two water containers, or twin tanks
   (6) Piece of nylon pad
   (7) Large piece of cardboard or equal

b. INFORMATION AND METHOD: The wash and drip dry method of cleaning fluorescent lights is the only completely effective method. It is basically a two-man job, and is usually employed during the summer cleaning or possibly during other school vacation periods. The vacuum cleaner is set up the same as in the vacuum method previously explained, and one person usually works the ladder while the other completes the wash and rinse operations on the floor as well as tending the person on the ladder. The hangers and fixtures are cleaned with the vacuum. The diffusers and lamps are removed and passed down to the floor for washing, rinsing, and checking the tube tips. Some ladder trucks are equipped with tanks for washing and rinsing, but two standard size garbage cans will serve. It is a good idea to mount the garbage cans on dollies for mobility. One container is filled with a detergent solution and the other with clear water for rinse. The diffusers are bathed in the detergent solution for washing, rinsed in the clear water, and placed upright on a piece of cardboard to drip dry. The tips are checked for corrosion and cleaned before washing, if needed, and the tubes are then washed clean and allowed to dry before replacing in the fixture. The diffusers are replaced after they are thoroughly dry. If the diffusers are waffle type, a good tool for the washing operation is a small paint brush or bottle brush. Some custodians keep an extra supply of diffusers on hand so an entire room of diffusers can be washed ahead and be ready for installation, thus permitting employees to wash the diffusers at a removed convenient area, if desired. Employ group replacement method in inaccessible areas.

In summary, it should be stated that mere whisking away of surface dust and removing foreign object from fluorescent lights does not constitute effective cleaning. The removal of surface dust, etc., serves only as interim cleaning, until such time as it is possible to thoroughly clean the fixtures and lights. Often suspected mechanical failures of fluorescent lights are directly traceable to accumulation of dirt on tubes and fixtures. The starting current of electricity is diverted from its essential direct path through the tube, thus causing failure. This type of failure will occur during periods of extremely high humidity.

While cleaning fluorescent light fixtures, the employee should be very careful in replacing lamps and diffusers. Many fixtures are installed with the tube gap not being a snug fit, and quite often the gap is so long that if the tube fits snugly at one end it will not make contact at the other end. If this condition exists, the tube will require centering to insure good contact at both ends. Slow starting and even complete failure will result if the tubes are not correctly set in position. Diffusers may fall and cause injury if not properly replaced, and it also should be borne in mind that all good safety measures are a requisite while performing the cleaning operation. Care should be taken so that side panels do not slip out.

Cleaning Incandescent Lights

Lights can only produce a full rated illumination when they are clean and in the best operative condition. Methods and equipment required to do the best cleaning job are listed below.

EQUIPMENT:

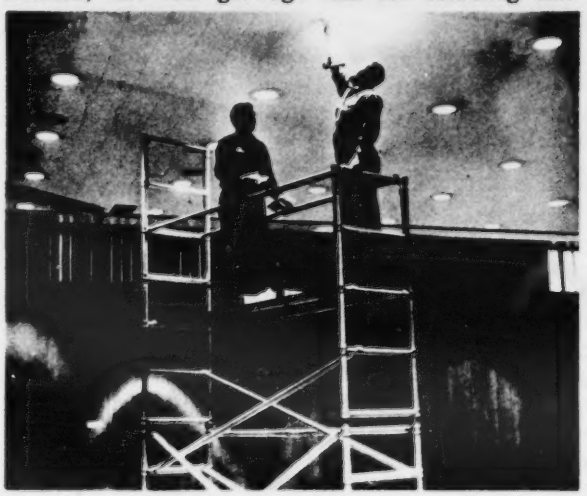
1. Ladder or ladder truck
2. Cleaning cloths
3. Solution container, garbage cans, twin tank truck
4. Nylon pad for cleaning contact points
5. Small screw driver, for stubborn light fixtures

Prepare solution in strength as for washing windows. In most cases, this is sufficient to remove the smudge. In no case should the solution be sudsy, or a rinsing process will be necessary.

Caution:

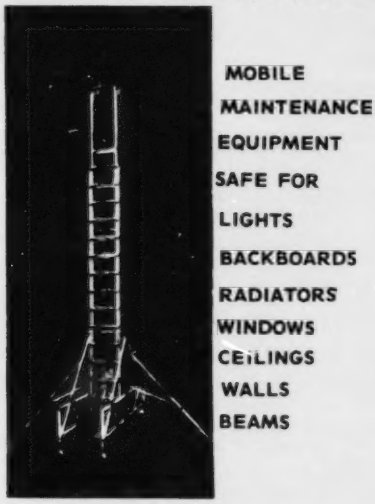
Turn off room lights before starting operation. One should never use a wet cloth around a heated bulb or tube because of danger of shock or lamp breakage due to rapid cooling.

Since static electricity produced when diffusors are dried with a cloth attracts more dust, it is best to use the drip dry method. If many diffusers are to be cleaned, use one garbage can for cleaning and



another for rinsing, or use the twin tank truck. The diffusers can be brushed with the solution, then rinsed with a hose or they can be washed with a cleaning cloth and rinsed with a cloth. Dishwashing machines may be used if the diffusers are not too large. After rinsing, allow the diffusers to drip-dry. Light tubes should be removed, cleaned, and tips checked for corrosion.

Care must be taken when replacing lamps and diffusers to replace snugly and properly to minimize



danger of falling and assure proper contact for lighting. A *very light* coating of plain vaseline on the threads of high heat lamps may prevent corrosion and sticking

Whenever a custodian must change a light in day-by-day maintenance, always take time to clean the fixture, as this removes unsightly finger smudges and guarantees that at least that fixture is cleaned.

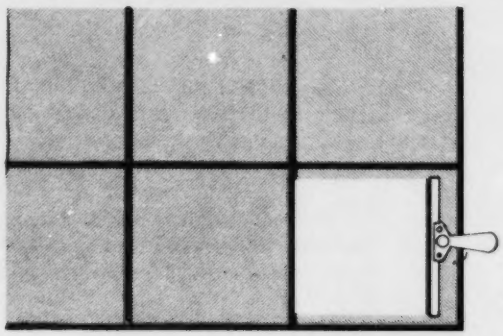
Cleaning Glass

Clean window glass reflects the housekeeping in a building. Dirty windows are distracting and repulsive. It impairs the transmission of natural light and certainly presents a poor impression of the custodial service to the persons looking out or in. Glass requires regular cleaning with the proper tools. Window areas in modern buildings are large, and must be kept as clean as possible to provide an attractive appearance. The deposit of dust on a window within a period of a month may reduce light transmission by as much as twenty-five percent, which represents a serious loss of natural light possibilities.

Frequency of Cleaning

The problem of cleaning window glass on the inside of the building is generally more important and should be accomplished more frequently than cleaning on the outside. Occasional rains remove some of the dirt on the outside, but of greater importance is the fact that the inside window glass tends to collect dust more readily. Radiators located underneath the windows in school buildings set up air currents within the rooms which carry the dust upward along the window side, with the result that much of the dust sticks to the glass surface. This is especially true in seasons where the building is heated. Then there is a temperature differential between the outside and inside that tends to cause moisture to condense on the inside glass. This condensation of moisture fixes the dust upon the glass surface on the inside.

The colder the weather outside and the more heating required on the inside, the greater the accumulation of dust and the greater the need for cleaning inside. In many cases, the inside cleaning can be done when outside work is not possible due to unfavorable weather conditions. Common sense must be used to determine the frequency of cleaning, for the cleaning of all windows in a school building is a sizable task.



WINDOWS ARE FOR LIGHT AND SIGHT

EQUIPMENT:
1. Window brush
2. Sponge
3. Chamois, soft cloth or paper towels
4. Water pail, spray bottle
5. Window squeegee
6. Safety razor blade and holder
7. Ladder or ladder truck

Cleaning Techniques

Cleaning school building windows presents one problem that is not always found in other types of buildings. Although the school windows may be large, architects design the windows with many smaller panes of glass to reduce the cost and simplify replacement of broken glass, a serious problem in many communities.

When a brush is dipped into a pail of water and applied to a window surface, considerable water is splashed away. This may not be so serious in outside washing, but it creates much more work inside. The spray bottle may be used to apply the water or cleaning solution.

A cloth may be used for washing. If it is of proper material and size, a cloth will hold considerable water and the mesh of the fabric will have a mild abrasive effect in loosening dirt from the glass. A cloth such as a sugar sack liner has this effect. A

tightly woven fabric is not satisfactory. Turkish towel material may be used to advantage in some cases, but the material must rinse fairly easily or it will remain dirty and tend to streak the glass.

A good quality of natural sponge is also a good tool for washing glass. It will hold considerable water which may be squeezed out easily. The open pores provide a type of mild abrasive effect. The sponge can get into corners readily, and may be rinsed out easily. Artificial cellulose sponges are not equal to natural sponges for washing glass, although they may be superior to some types of cloth.

After any water solution has been applied to the glass to dissolve the dirt, it must be removed. A squeegee used for this purpose provides a speedy method for large window panes, but is not useful on small panes. The removal of water by means of a squeegee tends to bring quite a splash of water at the lower cross-member of the window frame and to the window sill. This may not be objectionable on the outside of the window, but on the inside it has a tendency to drive water down into the crevice between the glass and the sash. Over a period of time, this will cause the sash to rot out. If water splatters over the sill and trim on the inside of the building, it must be cleaned up immediately. Furthermore, with the use of the squeegee, moisture will remain on the finish of the sash and trim, cause deterioration, and require more frequent refinishing. If a squeegee is used on the inside, a cloth should be placed at the bottom of the sash to catch the excess water.

A dry cloth such as a sugar sack liner may be used to remove the water from the window surface. It should be folded properly, and may be refolded from time to time to offer a series of clean surfaces. It will have to be wrung out when it becomes wet from the absorption of moisture. One disadvantage of a cloth for drying the glass is that it tends to leave lint on the surface. If it becomes soiled, it may be used for lint-free drying purposes.

A chamois skin of good quality is an excellent tool for drying. It absorbs the water from glass surfaces, can be used in corners, can be wrung out readily, does not leave lint, and can be rinsed out easily. Furthermore, it may be used for polishing, if a clear-appearing glass is desired, although it is questionable if the extra labor required is justified.

Only good quality chamois skins should be purchased for cleaning glass. A paper-thin skin will not last very long with countless wringings, cleaning of corners, and other routine hard jobs for which it will be used. A very thin skin will be somewhat difficult to handle and will not be good for cleaning corners. A properly tanned chamois skin should have a spongy quality and absorb water readily. There are inferior skins on the market that are slimy when wet and tend to slip between the fingers. They are more a leather than a chamois skin, and are not entirely satisfactory.

A new chamois skin should be washed out before being placed in service. Warm water, not hot, should be used for this purpose. A teaspoonful of washing soda per gallon of water may be added for this first washing to remove the dressing, but for later cleaning no alkali materials should be used. A washing solution containing trisodium phophate will remove the oils from the skin so that it becomes parched and brittle upon drying. A good skin can be ruined by a single washing in a strongly alkaline solution. Although a skin may dry stiff, it should become soft and pliable when placed in water again.

If sash corners have become filled with paint or soil, a square-edged safety razor blade set in a holder may be used to cut this material away. The same razor blade device may be used in cutting away paint spots that may have spattered on the glass.

Cleaning Agents

Water is the chief cleaning agent used in washing glass. Many professional window cleaners use only clear water, and claim it loosens and dissolves the dirt on the glass without requiring any other special cleaning materials. Soap should not be used since it leaves a film and requires additional rinsing or cleaning. Ammonia may be used to soften the water. Trisodium phosphate (a teaspoonful per gallon of water) may be added to the cleaning solution to assist in loosening dirt. It should not be used as a strong solution which may destroy varnished and enameled finishes.

Alcohol may be added to the water used for cleaning glass. Many of the commercial glass cleaning liquids now on the market consist of water with some alcohol. A cleaning solution of one part alcohol to ten parts water makes a satisfactory cleaning agent. Alcohol aids in loosening dirt, evaporates without leaving a residue, and is especially good during a freezing weather. If a weaker cleaning solution is desired because of cost, as little as five percent alcohol may be added to the water, but this will not be as good as the solution with a higher percentage of alcohol.

A scouring material such as Bon-Ami is sometimes used for cleaning glass. This has serious disadvantages. It requires time to apply it and even more time to remove it. Some of the particles may stick to the glass or to the sash and require consider-

able effort for removal. The powdered materials get into cracks and crevices and leave an unsightly appearance after drying. Some dust is created that requires additional cleaning. If a harsh powder is used, it may mar the glass and leave marks that cannot be removed. The use of these scouring materials has little value in window washing. Occasionally, some glass has become so very badly soiled, due to neglect, that such a scouring procedure may be required, but it should not be necessary often.

A stepladder or ladder truck is usually required to wash inside windows, since the top of the sash is too high to permit a worker to stand on the floor for this entire job. It is poor practice to stand on a desk or table or to stand on a sill and hang onto the frame or sash with one hand. A good stepladder gives proper footing and allows a person to work without fear. A safety type of stepladder is superior to the ordinary type. It may be a little heavier to handle, but it is safer and more stable.

Special precautions should be taken when windows are washed on the outside. The long extension ladder may be "wobbly". Without a feeling of security, the person is handicapped and moves more slowly. If window bolts are installed on the building, a safety window belt should be worn by the person working on the outside. There are special types of window platforms on the market that may be used for exterior washing. Such platforms should be used if safety belt provisions are not available. Some workers prefer to use both the platform and the belt, since this double protection gives them a greater feeling of security, allowing them to work more rapidly. The worker should be encouraged to take necessary precautions, since window washing is a hazardous occupation. For a worker to stand on an outside sill and cling to the sash with one hand while working with the other should be forbidden, as many accidents have occurred from such practice.

If a skylight glass is to be cleaned, special precaution should be taken to avoid accidents. The framework should be investigated to make sure that a person may work on it with safety.

There are many uses of glass in a school building other than window glass which require periodic attention: glass in doors, transoms, cabinets and cases, picture frames, clocks and mirrors. These usually do not present the same problems as window glass. The glass in doors, if soiled by finger marks, may require daily cleaning. This is especially true for main entrance doors. Cleaning with a dry or slightly damp cloth generally will suffice. Mirrors also should be cleaned daily. The glass doors in cabinets and cases should be cleaned once a week if they are dusty and require it. Transoms and clock faces, not easily reached, should be cleaned at least once a month. This type of glass can be cleaned rather readily with a cloth and no water.

In cleaning glass, an "up and down" or "back and forth" motion is preferable to a circular motion which is slower, leaves streaks and overlap marks, and corners generally not cleaned.

Wipe squeegee blade with a chamois or sponge. Start on dry surface close to frame, draw squeegee down to about three inches of the bottom of the glass. Repeat until top part of glass is clean.

Next, start on dry surface close to the frame you have just squeegeed. Draw squeegee across the bottom of the glass.

Cleaning Venetian Blinds

Venetian blinds are constant dust catchers. For this reason, it is very important to check them frequently and, in heavy traffic areas, this must be done daily. A thorough dusting and cleaning job is imperative. Use the proper method and tools.

The methods of cleaning venetian blinds are very limited. They have been a cleaning problem since their inception. The procedures that have been used are, at best, very cumbersome due to the size and shape of the blind. The following suggestions are not intended to convey the idea that they are the only methods available, nor are they necessarily offered for your adoption. Rather, they are included here as a method that has been used and proved helpful.

Material and Equipment

1. Good duster, clean rags, sponge, two buckets, a brush vacuum cleaner, two-way mop, and cleaner.
2. Tub or twin tanks for the dip method.

Method

If the blinds are cleaned regularly and the dust and stains removed before they are allowed to accumulate, the cleaning job is much easier.

First, dust thoroughly the blinds to be cleaned, either by using a good duster, soft rag (lint-free), or vacuum. After all dust is removed, the next step is optional. If the blinds are to be cleaned in the hanging position, pull to the closed position and, by using caution, apply a cleaning solution of water with ammonia or a light detergent or an approved cleaner. To avoid streaks, runs and drips, use toweling and apply the cleaning solution from the bottom of the blind in a continuous operation to both sides. Careful hand work around cords will be required. Rinse thoroughly, and dry.

If the blinds are to be removed, the blinds are laid flat on the floor. The same cleaning method can be used on each side. The floor may be covered with paper, if desired.

Another cleaning method (and the most popular if the equipment is available) is the dipping process. If a bathtub or dip tank is available, the cleaning solution is prepared and placed in the tub or tank. If

a twin tank is used, one tank is for the cleaning solution and the other for rinse water. Dip the blind for as little time as needed to loosen the soil, and rinse by dipping in rinse water or with a sponge and clear water. Do not wipe excess water; drip dry if at all possible. Again, caution must be exercised not to shrink the webbing and control cords too much. If the cords and webbing shrink beyond normal, weights may be hung on them as they are hanging to dry. In most cases, this stretches them back to their original length. Plastic webbing will not shrink as does cotton or other woven material.

Drinking Fountains

There is nothing that is more undesirable in a school building than a dirty drinking fountain. All *porcelain, enamel,* and *vitreous china* pieces should be cleaned daily when buildings are in use. Drinking fountains must be cleaned and disinfected daily and inspected frequently throughout the day to remove gum, candy wrappers, and other debris. Clean these surfaces with a soft cloth, sponge or nylon pad specifically designed for this purpose, and a germicidal cleaner. Wipe the valve handle and other plumbing daily with a cloth or sponge moistened with the solution, and wipe dry. Check the drain holes under the fountain head and, to clean, use a coffee urn nylon brush of proper diameter. Steel wool or abrasive powder must never be used on porcelain, enamel or vitreous china. Abrasives must not be used on fiberglass.

It is also important to use a plunger or drainpipe cleaner to move settlings down the trap. Various items find their way into the trap and gradually build up debris and germs, which is unsanitary and eventually stops the flow entirely.

Care of Carpets

At present the use of carpets in schools is in its infancy. However, the trend is toward more use of carpeting in school buildings, implying a need for researching the problems and implementing new maintenance methods. As proper care extends by two- or threefold the life of a carpet, the importance of knowing and applying approved techniques is self-evident.

Study, learn and become familiar with the type of filament (nap or pile) and the manufacturing processes of the carpet you are responsible for maintaining. This has a critical bearing on type of care, cleaning and maintenance beyond the ordinary vacuuming which is familiar to most laymen.

There are many variations in the materials used for the filament, backing and manufacturing methods used in carpet construction. Some of these are more susceptible to trapping dust and abrasives at the base of the pile. These particles, under normal traffic conditions, tend to shear the filment, thus shortening the life of the carpeting. Some of these materials likewise respond more readily to vacuum cleaning, spot cleaning, shampooing or dry cleaning.

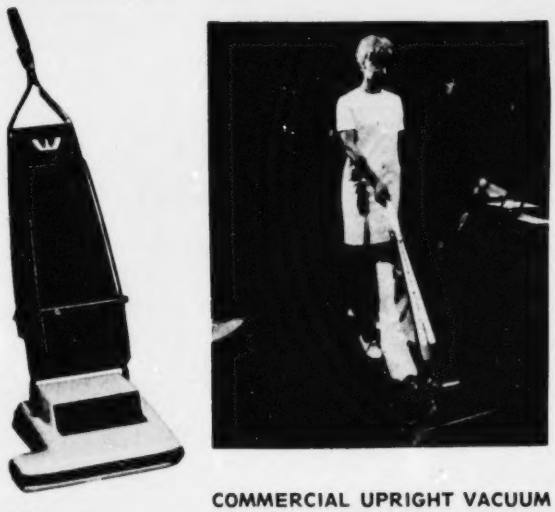
At the time the carpet is being laid, trimmings and spare pieces should be retained for future repair work and for experimentation in spot and stain removal, or variations in cleaning methods. Also at this time it is advisable to gather pertinent information relevant to manufacturers' recommendations on cleaning and maintenance.

In the care and maintenance of carpets, there are four distinct operations that must be considered:

1. The daily maintenance schedule usually involving vacuuming
2. The weekly, more thorough, vacuuming, working in different directions
3. Spot cleaning for removal of stains as they occur
4. The periodic, thorough cleaning (shampooing or dry cleaning) normally conducted two or three times a year as needed

1. DAILY VACUUMING

A vacuum cleaner with a power driven brush or combing device is recommended to move the nap and loosen the trapped dust and dirt. Some vacuum machines are designed with two motors, one to drive the brush and the second to drive the vacuum fan. Due to the fact that the soil, dust and dirt in a carpet may not be visible, there may be a tendency to slight the daily routine. It should be remembered that carpets are as subject to the soil tracking or deposits as any other comparable use area, and that failure to follow a daily maintenance program will drastically shorten the carpet's life.



COMMERCIAL UPRIGHT VACUUM

Separate motors for dirt-agitating, pile-lifting brush and 1 h.p. vacuum system permit thorough one-pass cleaning on carpets of all types.

2. WEEKLY

The carpet should be given a more thorough vacuum cleaning, working in different directions. In the manufacturing processes, most carpet filament (nap or pile) lays slightly directional, so that a noticeable drag occurs in one direction and the machine glides easily in the opposite direction.

3. SPOT CLEANING

In spot removing, extreme caution should be

VIBRATING ACTION LOOSENS DIRT, NEW VACUUM SYSTEM PICKS IT UP

exercised. The custodian who does not have a thorough knowledge of the proper procedure for a specific type of stain or carpet material should consult the manufacturer or a dependable supplier. Improper spot cleaning may do more damage than good. Both before and after spot cleaning the carpet should be thoroughly vacuumed. Spot cleaning materials should be used strictly in accordance with the manufacturer's directions. Materials for spot cleaning may include sponges, soft bristle brush, cloth or toweling, spray bottle or aerosol can of spot remover.

4. **SHAMPOOING OR DRY CLEANING**

Consistent with the need and the manufacturer's recommendations, periodically carpets should undergo a thorough cleaning, either by shampooing or dry cleaning. The full life expectancy of a carpet depends on this. Before and after shampooing or dry cleaning, the carpet should be thoroughly vacuumed. As in spot cleaning, the custodian who does not have knowledge of the proper procedure for this type of cleaning should consult the manufacturer or a dependable supplier as to procedures and materials to use.

The various methods of carpet shampooing or dry cleaning include such equipment as machines which spread liquid or dry foam, agitate the foam on the carpet pile, and pick up the residue by vacuum, in one operation. Another method is to spray the cleaner liquid or foam from a pump dispenser or aerosol can, then agitating with a brush on a machine or manually with a long-handled brush, followed by a wet pick-up vacuum machine, vacuuming again after carpet is dry.

The dry cleaning method involves the use of chemically treated granules or compound which is spread on the carpet, worked into the carpet nap which attracts the soil and dirt, holding it until picked up by vacuuming.

Fire Extinguishers and Alarms

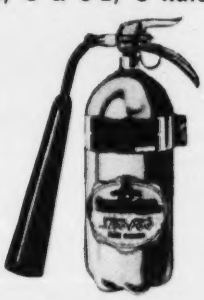
Be ever alert to fire hazards and, when they are found, correct the situation immediately. Custodial employees should become familiar with the location of fire alarms, fire extinguishers, hydrants, hoses and street fire alarms. They must also become familiar with their duties during fire alarms and procedures in case of actual fire.

Inspection, servicing and use of specific fire extinguishers, fire hoses, etc., should become a part of this program. The type of extinguisher to use on various kinds of fires is of utmost importance.

The local Fire Department is a good source of information on these subjects.

5 LB. DRY CHEMICAL
for 8-B; C Rated Fires

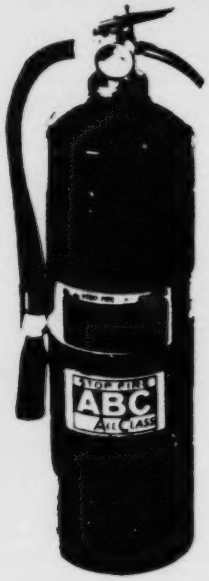
"SNO-FOG" CO2
for 4-B; C & 6-B; C Rated Fires



2½ GAL. PRESSURIZED WATER
for 2-A Fires

THE MOST COMMON TYPES OF FIRE EXTINGUISHER IN SCHOOL BUILDINGS ARE THESE

ABC ALL CLASS
stored-pressure dry-chemical fire extinguishers for Class A, B, and C fires.



2½ GAL. FOAM-TYPE
for 2-A, 4-B Rated Fires

Flag Display and Care

Among the daily duties of the custodian is the display of the United States and state flags. Reverence and care that should be exercised in handling the flags must be a part of this program.

It is required in Oregon that both the U.S. flag and state flag be flown on or adjacent to all public schools from sunrise to sunset daily when school is in session. On Memorial Day the U.S. flag is flown at half mast from sunrise until noon and at full staff from noon until sunset. Flag Day and other holidays the flag is flown at full mast. Correct procedures for the flag ceremonies are outlined in the manual listed below.

Reference:

"Let's Be Right on Flag Etiquette", distributed by National Emblem Sales, The American Legion, P.O. Box 155, Indianapolis, Indiana 46206.

Cold Weather Precautions and Protection

There is no fixed formula or procedure to follow which is applicable to all buildings. For that reason it is recommended to survey the needs and develop such a program for each building before winter arrives. The program must be developed to protect vulnerable plumbing and automatic sprinkler systems from freezing. This includes water lines, meters, valves, toilet bowls, urinals, drain traps, etc.

In extreme weather it may be advisable to operate the heating plant around the clock. Some modern automatic heating plants have low temperature control devices which take over before a freeze occurs.

Other precautions may include blocking off or closing vents in attics and crawl spaces under buildings. Open scuttle holes to the attic for spent warm air. Close or partially close fresh air dampers at night and weekends. Where possible, recirculate for initial warmup.

Portable electric heaters, or even a light globe, may protect a remote area from the cold. Caution must be exercised in use of lamps or heaters to avoid creating a fire hazard.

Keep air intake and exhaust louvers and parapet walls clear of snow. Use precautions to ensure that downspouts are free of obstructions.

Shut off and drain grounds sprinkler systems. Shut off and drain plumbing facilities in field houses. Use antifreeze material in the traps of toilet bowls and urinals which cannot be drained.

Desired Frequency of Operational Tasks

Budget, personnel allowances and building usage will vary so that the frequency may be increased or decreased accordingly.

Constantly look for physical and fire hazards, needed repairs, broken glass, inside and outside.

Basically and fundamentally, the desired frequency of operational tasks to be performed are as follows:

Immediate Attention

Clean or paint over obscene writing inside and outside the building. Do emergency cleanup wherever it may occur.

Classrooms, Industrial Arts, Homemaking, Library, Administrative Area, Lounges

Daily

Sweep floors, vacuum carpets and spot clean as needed, empty pencil sharpeners and waste baskets, dust all flat surfaces, spot mop as required, clean door glass and mirrors, spot clean wainscot and other surfaces, replace burned-out light globes or fluorescent tubes. Clean erasers, and possibly the chalkboards. If applicable, clean and sanitize sink, lavatory, toilet and drinking fountain.

Weekly

Move semi-fixed furniture for sweeping and dusting. Clean chalkboards, if not done daily. Do more thorough vacuum cleaning of carpeted areas. In Industrial Arts areas, vacuum or blow light fixtures. Remove cobwebs.

Monthly

Clean radiators, air supply and exhaust grilles. Clean inside windows. Schedule some floors for rotational scrubbing and waxing. Schedule some light fixtures for rotational cleaning, dusting, vacuum cleaning or blowing.

Three Times a Year

Scrub and wax floors not on another schedule. Thoroughly clean light fixtures and venetian blinds. Clean exterior windows and light fixtures as required. Thoroughly clean carpeted areas by vacuum and deep clean by some approved method.

Annually

Do complete housecleaning including furniture, walls, windows inside and outside, chalk and cork boards, light fixtures. Refinish floors. Clean carpeted areas thoroughly by vacuum and an approved shampoo or deep cleaning method.

Toilet Rooms

Daily

Sweep, mop and sanitize floors. Clean and sanitize toilet bowls, urinals, lavatory and chrome fixtures. Check and clean toilet partitions, doors and walls for writing, soil and dust. Clean mirrors and inside windows. Restock and clean all dispensers. Empty and clean waste containers. Replace lights as required. Some of the tasks listed may need attention more than once a day.

Weekly

Clean or dust radiators, window and door trim. Clean plumbing outlet fixtures. Remove cobwebs.

Monthly

Clean light fixtures, air supply and exhaust grilles.

Annually

Do a complete housecleaning including fixtures, partitions, walls, doors, windows inside and outside, light fixtures. Refinish floors as required.

Cafeteria Lunchroom, Teachers Lunchroom, Kitchen

Daily

In *Lunchrooms,* remove waste cans, sweep and spot mop floors (normally the table and chair cleaning is the responsibility of the cafeteria personnel), spot clean wainscot, doors, door glass and counter tops. Dust flat surfaces not cleaned by others. Replace burned-out light globes or fluorescent tubes. If the lunchroom is a cafetorium or multipurpose room, remove the tables and set up for the next intended usage. Reset the furniture for the lunch period. Clean drinking fountains.

In the *Kitchen, Storage and Walk-in Refrigerator,* remove waste or garbage cans, empty, clean and line all cans and clean waste can storage area. Sweep and mop the floors. Clean the range and dishwasher hoods and filters as required (normally, cleaning the ranges, grilles, steamers, tables, sinks and other kitchen equipment are the responsibility of the cafeteria personnel). Spot clean the walls, doors and glass. Replace burned-out light globes or fluorescent tubes.

Weekly

In *Lunchrooms,* completely mop the floors, clean windows, wainscot, doors, etc. In *Kitchens,* clean the range and dishwasher hoods and filters if not on another schedule. Remove cobwebs.

Monthly

Scrub and wax floors, clean radiators, air intake and exhaust grilles. Clean light fixtures. Clean under part of tables, benches or chairs. Clean in-wall table wells.

Three Times a Year

Scrub and wax floors if not on above schedule. Clean the outside windows. Clean hood ducts so far as possible.

Annually

Do a complete housecleaning including furniture, walls, windows inside and outside, light fixtures, radiators, unit heaters. Scrub, wax, refinish floors as needed. If the building design includes a stage, this floor may need to be sealed.

Auditorium and Stage

The auditorium and stage are often used daily as a classroom. Sweep or vacuum floors and spot mop the same as in other areas of the building, depending on use. Replacement of lights may require attention of two men, depending on ladders or staging, and may be deferred to a more convenient time. Telescoping ladders are available for high light fixtures. Consider group replacement of lamps.

Weekly, Monthly, Three Times a Year

Do the same as in the other areas of the building, depending on use.

Annually

Do a complete housecleaning the same as in other areas of the building. The stage floor may need to be sealed. Window drapes and curtains may

need cleaning and fireproofing (consult fire department). The drape and curtain cleaning and fireproofing may be an outside contract job.

Gymnasium, Locker Rooms, Shower Rooms

Daily

In the *Gymnasium,* sweep floors and spot mop as required. Clean door glass, dust and spot clean bleachers and wainscot. Replace light globes or fluorescent tubes—this may be a two-person job and may be deferred to a more convenient time, dependent on ladders or staging required. Telescoping ladders are available for this job, and group replacement of lamps should be considered. According to usage and available workers, the gymnasium floor may need sweeping two or three times a day.

In *Locker and Shower Rooms,* mop and disinfect floors daily. Clean and disinfect toilets, lavatories, drinking fountains, shower and valve fittings. Dust and spot clean lockers and benches. Clean mirrors and glass.

In *Exercise and Wrestling Rooms,* sweep, spot mop, dust daily as required. Clean wrestling mats and disinfect daily according to use.

Weekly

Clean radiators, fresh air and exhaust grilles. Clean under bleachers. Clean inside windows. Clean and disinfect shower room walls and ceiling.

Three Times a Year

Clean outside of windows. Check under fixed mats for mold or fungus. Lift mats and clean with antimold or fungus cleaner. Air out and dry mats before replacing. This is an especially critical matter where mats are laid on concrete.

Annually

Do a complete housecleaning the same as in other areas of the building. Seal the wood gymnasium floor. Cement or ceramic floors may need sealing with a material designed for this purpose. Wrestling, tumble and other mats should be cleaned and disinfected; canvas or other woven material covered mats may be cleaned with suitable compounds and a floor machine in a removed, suitable area. Dry thoroughly before replacing.

Corridors, Entrances, Stairs

Daily

Sweep floors, sweep or vacuum stair treads, and spot mop. Depending upon traffic and weather conditions, some of these areas may need attention two or three times a day. Do not allow slip hazards of wet floors in entrances. Clean door and display case glass. Dust and spot clean wainscot and hand rails. Clean and sanitize drinking fountains. Replace burned-out light globes or fluorescent tubes. Clean outside walks, stairs, vestibule and entrance mats inside or outside.

Weekly

Clean radiators, stair risers, and remove cobwebs.

Monthly

Scrub and spot wax floors as needed. Clean interior windows. Clean show cases.

Three Times a Year

Clean light fixtures and exterior windows. Scrub and wax floors if not on another schedule. Dust walls above wainscot.

Annually

Do a complete housecleaning including doors, walls, stair wells, stair tread and risers, windows inside and outside, chalk and cork boards, display cases. Scrub and wax floors. According to type of material, some floors and stair treads may need to be sealed. Be sure to select the proper material recommended for that particular type of floor or tread. Consult an expert on this matter.

Stain Removal

The removal of stains from floors, walls and furniture is one of the most technical operations performed by the custodian. First, there is no universal stain remover. Stains are chemicals. The remover is a chemical. Stain is removed by the action of the remover chemical upon the stain chemical. Sometimes one chemical will remove several types of stain and, conversely, one stain can be removed by more than one chemical. It is important to follow the directions for mixing the solution. Solutions too strong may damage the material which is stained. Solutions too weak will not do the job. Scrubbing, washing, rubbing and drying are sometimes as important as the use of the chemical. Follow directions exactly as outlined on the accompanying chart.

Spot and Stain Removal Methods

There are two simple methods that, when followed as directed and all precautions applied, will remove most soils and stains. Following the precautions will assure safety to the material being cleaned as well as the personnel.

Caution: Some synthetic and natural fibers and their color systems can be seriously damaged by chemical attack of the soil or stain and can be further damaged by the removal of the stain. This damage is usually the result of fugitive dye systems. The colors will bleed or run.

Warning: **DO NOT USE ANY CLEANING MATERIAL OR MIXTURE ON ANY CARPET FIBER BEFORE APPLYING THE FOLLOWING TEST!**

Always test all materials first by applying a small amount of the cleaning solution or chemical on a hidden or unnoticeable area before attempting to remove a stain. Press a clean white tissue or cloth against the test area and hold for 10 to 15 seconds. Remove and check the tissue or cloth for dye transfer or fiber deterioration. If the dye has transferred to the tissue or the area appears to have changed, the color system is not stable and may require redying after cleaning. The fiber may be damaged by further cleaning. "USE CAUTION".

Caution: Always remove any stain promptly to prevent chemical attack which may result in damage to the material and its color system. Some stains, when left unattended for a few minutes, will react chemically and may cause irreparable damage.

Soft or Liquid Soils

A. Carefully wipe or blot up all excess soft or liquid soil deposits using absorbent toweling until no soil trace is found in the toweling.

B. Apply mixture (½ shampoo, ½ water) directly into the soiled area and allow to stand for ten seconds. (Use spray bottle). *"DO NOT OVERWET".*

C. With the blunt end of a bone scraper, gently massage the solid fibers with a moderate scraping action. Use *CAUTION* at this point; heavy or excessive scraping pressure may tear or loosen the fibers causing a fuzzing condition. Do not rub. Start massaging slightly beyond the outside of the spot area and work toward the center. This will prevent the stain solution from migrating outward and the massaging action will loosen and release the soil particles. As the foam builds, particles and liquids will loosen and blend with the spotting solution.

D. Carefully lift the soil saturated foam with a bone scraper and place on a towel or rag to prevent contamination of surrounding areas.

E. Place absorbent toweling over the spot and press firmly to transfer as much moisture as possible into the toweling. DO NOT RUB! Repeat as necessary until no more moisture is absorbed by the toweling.

NOTE: If the soil remains, proceed to the instructions outlined in the second method — Staining Soils.

F. Using a small hand brush, brush the fibers in one direction to lift and straighten fibers and to restore texture.

G. Trim any fuzz or excess fiber with a single edge razor blade.

STAINING SOILS

A. Carefully wipe or blot up all excess soft or liquid soil deposits using absorbent toweling. Press spot firmly with toweling until no soil trace is found on the toweling.

B. Apply stain remover following the manufacturer's instructions.

C. With the blunt end of a bone scraper, briskly but gently massage the soiled fibers with a moderate scraping action. Start massaging outside the spot area and work toward the center. This will prevent the stain solution from migrating outward and the massaging action will loosen and release the soil particles. The particles and liquids will loosen and blend with the solvent.

D. Place absorbent toweling over the spot and press firmly to transfer as much moisture as possible into the toweling. *DO NOT RUB!* Repeat as necessary until no more moisture is absorbed by the toweling.

E. If stain is not satisfactorily removed, repeat steps A, B, C and D.

F. Apply shampoo solution directly over the spot. With the blunt end of a bone scraper, massage the area until a thick foam mass appears. The mass may discolor as the soil particles and staining liquids rise.

G. Place absorbent toweling over the spot and press firmly to transfer as much moisture as possible into the toweling. *DO NOT RUB!* Repeat as necessary until no more moisture is absorbed by the toweling.

H. Using a small hand brush, brush the fibers in one direction to lift and straighten fibers and to restore texture. Remove excess fiber or fuzz with a single edge razor blade.

STAIN REMOVAL

STAIN	ON WOOD	ON LINOLEUM	ON ASPHALT TILE	ON VINYL	ON MARBLE, TERAZZO OR OXY-CHLORIDE CEMENT	ON CONCRETE
BLOOD	Rub with cloth dampened in clear cold water. If stain persists, dampen cloth with ammonia.	Same as for wood.	Same as for wood.	Same as for wood.	Rub with cloth dampened in clear cold water. Bleach with peroxide, if stain persists.	Same as for marble.
GREASE OR OIL	Pour kerosene on spot. Permit to soak for a short time. Wipe dry with a clean cloth. Wash with all-purpose synthetic detergent solution, rinse, then dry.	Scrub with warm all purpose synthetic detergent solution. Rinse with clear water.	Same as for linoleum.	Same as for wood.	Pour solvent on spot, cover with Fuller's Earth, and let stand for several hours. Repeat if necessary.	Pour alcohol on spot. Rub on spot. Rub with clean cloth.
INK	Apply solution 1 part oxalic acid crystals to 9 parts warm water. Permit to stand until dry. Mop with clear water.	Use warm all-purpose synthetic detergent solution if stain persists, mix 2 tbl. sodium perborate in pint of hot water. Mix whiting to form paste. Apply to spot, let dry.	Same as for linoleum.	Wash with all-purpose synthetic detergent, rinse, then dry. If stain persists, rub with cloth dampened with ammonia.	Same as for linoleum.	Same as for linoleum.
IODINE OR MERCURO CHROME	Apply alcohol and rub with clean cloth.	Same as for wood.	Warm neutral soap solution.	Wash with all-purpose synthetic detergent, rinse, then dry. If stain persists, scrub with scrubbing powder and warm water.	Apply alcohol and cover with fuller's earth.	Apply alcohol and rub with clean cloth.
PAINT	Use oxalic acid solution, or 1 lb. trisodium phosphate in 1 gal. warm water.	Rub with #0 steel wool dipped in turpentine. Wash with all-purpose synthetic solution and rinse.	Rub with steel wool and all-purpose synthetic detergent solution. If area is large, use steel wool on buffing machine.	Rub with #0 steel wool dipped in kerosene.	Rub with #00 steel wool dipped in turpentine.	Scrub with 1 lb. trisodium phosphate in 1 gal. hot water, rinse with clear water.
RUST	Wash with all-purpose synthetic detergent. Rub with #0 steel wool if necessary.	Apply solution 1 part oxalic acid to 9 parts warm water. Rinse thoroughly with clear water.	Rub with #0 steel wool and all purpose synthetic detergent solution	Same as for linoleum.	HORIZONTAL SURFACES To ¾ gal. water, add 1 lb. sodium hydrosulfite. Add enough water to make a gallon solution. Cover stain with solution and let stand ½ hour. Absorb with cloth by rubbing. Rinse with clear water. VERTICAL SURFACES Make paste with whiting and 3 oz. sodium citrate & 3 oz. sodium hydrosulfite. Apply with putty knife and allow to remain 1 hour. Wash with sodium citrate.	Dissolve 1 part sodium citrate in 6 parts water. Mix with equal parts of glycerin. Make a paste with whiting and apply to stain. For bad stain, wash with sodium citrate solution ⅛ parts. Add pad soaked in sodium hydrosulfite for 10-15 minutes. Wash thoroughly with water.
SOLE & HEEL	Rub with #0 steel wool or wash with all-purpose synthetic detergent solution.	Same as for wood.	Same as for wood.	Rub with #0 steel wool dipped in all-purpose synthetic detergent solution.	Wash with all-purpose synthetic detergent solution and rinse.	Same as for marble.
CHEWING GUM	Remove gum with putty knife. Apply alcohol, rub with clean cloth.	Same as for wood.	Remove gum with putty knife. Do not use alcohol on asphalt tile.	Remove as much as possible with putty knife. Rub with #0 steel wool dipped in all-purpose synthetic detergent solution.	Same as for wood.	Same as for wood.

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REMOVAL OF OTHER SPOTS AND STAINS

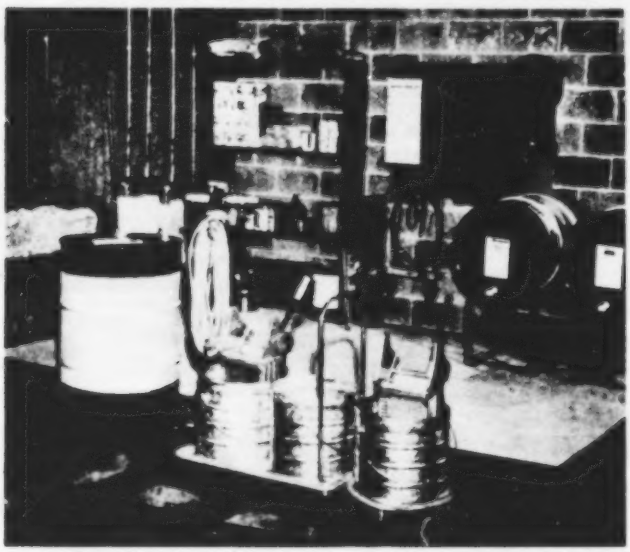
Stain	Removal Procedure	Result
Crayon	Paint and tar remover and volatile solvent	Complete removal
Furniture polish	Neutral detergent solution and ammonia	Complete removal
Oil paint	Paint stripper, paint and tar remover, volatile solvent, and neutral detergent solution	Complete removal
Shoe dye	Paint and tar remover, volatile solvent, neutral detergent solution, ammonia, and acetic acid	Complete removal
Shoe polish	Paint and tar remover, volatile solvent, neutral detergent solution, ammonia, and acetic acid	Barely visible trace of stain remaining
Vegetable dye	Neutral detergent solution, ammonia, and bleach	Barely visible trace of stain remaining
Coffee	Neutral detergent solution and acetic acid	Complete removal
Coffee with cream & sugar	Neutral detergent solution and acetic acid	Complete removal
Chocolate	Hot neutral detergent solution, ammonia, and acetic acid	Barely visible trace of stain remaining
Milk	Neutral detergent solution, ammonia, and acetic acid	Complete removal
Ink (permanent)	Neutral detergent solution, ammonia, acetic acid and sodium hypochlorite solution	Complete removal
Lipstick	Paint and tar remover and volatile solvent	Complete removal
Nail polish	Amyl Acetate	Complete removal
Dirt	Vacuum and neutral detergent solution	Complete removal
Iron rust	Neutral detergent solution and hydrofluoric acid	Complete removal
Plaster	Neutral detergent solution	Complete removal
Red clay	Neutral detergent solution and hydrofluoric acid	Complete removal
Animal glue	Neutral detergent solution, ammonia, and acetic acid	Complete removal
Casein glue	Neutral detergent solution, ammonia, and acetic acid	Over one half of the stain
Rubber cement	Paint and tar remover, volatile solvent and benzene	Complete removal
Berry stain	Neutral detergent solution	Complete removal
Cooking oil	Volatile solvent	Complete removal
Gravy	Neutral detergent solution	Complete removal
Ice cream	Neutral detergent solution, ammonia, and acetic acid	Barely visible trace of stain remaining
Ketchup	Neutral detergent solution and ammonia	Barely visible trace of stain remaining
Mustard	Neutral detergent solution, ammonia and bleach	Over one half of the stain removed
Tea	Neutral detergent solution and acetic acid	Complete removal
Acetone	No stain	
Alcohol	No stain	
Bleach	Neutral detergent solution	No removal or very slight removal
Bleach (immediate removal)	Neutral detergent solution	No removal or very slight removal
Calcium chloride	Neutral detergent solution	Complete removal
Ether	No stain	
Gentian violet	Alcohol, neutral detergent	No removal or very slight removal
Gentian violet (immediate removal)	Alcohol, neutral detergent solution and bleach	Complete removal
Iodine	Alcohol, potassium iodide, sodium thiosulfate bleach and neutral detergent solution	Less than one half of the stain
Lysol	Paint and tar remover and neutral detergent solution	Barely visible trace of stain remaining
Merthiolate	Alcohol, neutral detergent solution, ammonia and bleach	Barely visible trace of stain remaining
Phenol (1%)	Neutral detergent solution	Complete removal
Urine	Neutral detergent solution and acetic acid	Complete removal
Vesphene	Neutral detergent solution	Complete removal
Wescodine	Alcohol, potassium iodide, sodium thiosulfate bleach and neutral detergent solution	Less than one half of stain removed
Asphalt	Volatile solvent	Complete removal
Chewing Gum	Volatile solvent—dry ice—Freon	Complete removal
Wax	Paint and tar remover and volatile solvent—dry ice—Freon	Complete removal

Care of Cleaning Equipment

Dirty, defective or inoperative equipment produces only faulty work in the building. Maintaining clean, safe equipment, ready for immediate use and properly stored, is an indication of an efficient custodian. The custodian's closet and storage area should also be maintained in a presentable manner at all times.

Procedures

Hair brooms must be combed so that the bristles



are clean, then hung by the block with the bristles facing away from the wall. It is good practice to alternate the handle in the two holes of the block at least once a month. Never stand the broom on the bristles.

Bench brushes must be cleaned and hung in such a manner that the weight of the brush does not rest on the bristles. This is accomplished by either hanging on wall brackets or inserting it in the handle of a dust pan.

Keep edge of the dust pan straight. If the edges are bent, the dirt will be swept under the pan instead of into it. Damp particles picked up in a dust pan and allowed to dry give the dust pan an untidy look. If this occurs, the dust pan must be washed and dried before it is hung up.

The putty knife is an efficient tool to remove gum, candy, etc. As a safety precaution, carry the putty knife in a leather case; otherwise, when carried in the pocket with the blade up, it may cut your hand or damage upholstery, clothing, and other items.

Improper care measurably decreases the usefulness of the sweeping mop. It must be brushed out or vacuumed and then hung with the straight end away from the wall. Treat the mop as needed with a good grade of dust layer chemical. *Apply according* to directions on container.

A wet mop must be rinsed clean, the strings combed out straight, and hung so the air can circulate through. When a wet or damp mop is stored in a closed area, it will sour and produce a bad odor. If the strings are not combed out, they will ball, knot, and fail to work properly.

The mop press or wringer must be rinsed often while in use and all strings cleaned from the gear track to make it work freely. After using, always rinse it clean and wipe dry.

Mop buckets and pails must be rinsed thoroughly and dried or turned upside down for drying in a suitable place. Remove any strings around the axle and swivel of caster buckets. A small amount of grease applied to the axle and swivel will ease control when the bucket is pushed or pulled.

Ladders and/or ladder trucks should be cleaned and safely stored.

Trash carts or bags must be emptied daily, cleaned often and safely stored. Vacuum cleaners should be wiped clean, cords, hose and tools cleaned, the bag emptied or exchanged as needed.

Corrosion

Corrosion can be prevented by keeping equipment free from the elements that cause corrosion. Cleaning agents must be *used only in accordance with the instructions on the label.* Corrosion from other sources can be prevented by cleaning any fixture which might become corroded in time. It requires study, and application of preventive methods.

Types of Corrosion

General Corrosion: May occur when an inorganic acid is used in cleaning.

Pit Corrosion: Usually brought about by the action of the Halogen family of chemicals (Chlorine, Fluorine, Iodine, Bromine). The action of these chemicals is increased with the presence of acid conditions.

Contact Corrosion: Noticed in cooking utensils after cooking with vinegar, certain fruits, and vegetables. Also, foods are usually seasoned with salt, which may set up a corrosive condition between the salt and the metal. Strong alkalies and acids in cleaning may result in this type of corrosion.

Fretting Corrosion: Occurs where rubbing or pressure produces a strain on metal parts.

Removing Corrosion

Aluminum: Silicates of soda, the polyphosphates and sodium metasilicate are good aluminum cleaners. Other alkalies are very corrosive. Inorganic acids are very corrosive, and abrasive powders are not recommended.

Bronze: An alloy composed of copper and tin. Wash with a neutral cleaner and rinse thoroughly. Abrasives are not recommended, but if badly corroded may be necessary.

Copper and Brass: Corrode badly unless protected from the air. Strong alkalies have a corrosive effect. After cleaning with a neutral cleaner, the surface may be protected by clear lacquer.

Stainless Steel: All cleaning should be directed toward the preserving of the smooth surface of the metal. It may be called non-corrosive, but it is by no means indestructible. After cleaning, rinse thoroughly and dry with paper toweling and soft cloth. Italian pumice or whiting are classified as gentle cleaners.

Proper maintenance which will help metals retain their original beauty and will help prevent their premature deterioration should be an important consideration in every sanitation program.

Summer Work Schedule for School Custodians

The *easiest* way to handle any project is to plan it in detail. Making up a schedule for the summer work program requires details as to supplies and equipment needed for work to be done. Work must be planned so that all areas will be given the necessary attention and all jobs completed when school is ready to begin. All areas must be in condition to operate smoothly throughout the school year. Work must be arranged so that the most important work has been completed before staff vacations begin. Floor maintenance is detailed in another State manual, "Floors and Floor Maintenance".

Procedures

A thorough building renovation during the summer requires a systemized procedure if it is to be finished by the time school is opened in the fall. The summer vacation presents the only opportunity to clean the building from attic to basement. Some custodians feel that they have so much extra time during the summer that they are inclined to loaf in the earlier weeks of summer vacation. Then they must rush through the work shortly before school opens in the fall.

It is more sensible to set up a reasonable summer cleaning schedule and proceed at an even, steady pace throughout the period. There are usually a number of miscellaneous jobs to do other than housecleaning, such as repairs, some quite simple and others more elaborate. It is possible that outside mechanics must come in to make repairs, and thereby interfere with the custodian's work.

By using the suggested checklist, a custodian knows what jobs are to be done and when to do them. Therefore, the custodian can order the necessary supplies and materials in advance of the particular job. The custodian should *check with school officials* to learn the plans for special repair work so that the room is not cleaned, only to find that the painters will paint the room before the reopening of school.

In outlining the summer work, the custodian should decide which jobs must be done early and which can be done last. For example, it would be a waste of time and energy to wash windows at the beginning of the vacation period, since they would be soiled again by the time school opened.

In scheduling summer work, two general plans of cleaning may be considered. One plan recommends doing one particular type of job throughout the entire plant before undertaking another. For example, light fixtures or furniture may be cleaned throughout the building in a single continuous job. The second plan suggests general housecleaning in one section of the building, then moving on to another part. This plan involves many different types of work in a limited area, causing frequent movement of tools and equipment. Repairs should be made in the earlier part of the summer, the cleaning scheduled later.

By following the suggested check list for summer work, the custodian will be aided in estimating the work program and in systemizing the custodian work load.

In setting up vacation cleaning schedules, first determine the tasks for which each custodian shall be responsible. Then determine the approximate time required to perform the various tasks. Finally, draft a definite work plan to follow during the summer months which will use all the time available and include all necessary jobs. Care of the boiler, preparing it for state or insurance company inspection, should be near to or at the top of the priority list. The plan will simplify the work and, in many cases, improve it.

A carefully planned work schedule aids in making economical use of the effort and time spent by the custodian and serves as a check list on items or tasks that might be neglected.

General Duties and Cleaning

1. School is usually dismissed in the morning of the last day of the school year, which provides opportunity to discard all the rubbish. Then start cleaning the boiler and furnace; remove ashes, punch flues, etc. The custodian should be ready to begin the summer cleaning the following day.
2. In the steam heated buildings, prepare the boiler for inspections by the State of Oregon inspector and the insurance company as follows:
   a. Open blow-down valve and drain boiler
   b. Open manhole
   c. Open manholes, water leg-plugs and/or handhole plates
   d. Open petcocks on a steam gauge water loop
   e. Scale and wash down boiler
   f. Drain and clean hot water tank if hot water is made by steam heat
   g. Insert rag wicks in hand or plug holes to dry up water
3. Clean all toilet rooms
   a. Clean ceiling
   b. Clean vents and pipes
   c. Clean walls

d. Clean radiator and heat registers
e. Clean floors
f. Wash paint work
g. Wash partitions and doors
h. Wash toilet seats and toilets
i. Wash urinals
j. Wash other fixtures, plumbing, traps, etc.

4. Clean classrooms
   a. Empty wastepaper
   b. Take out rubbish
   c. Clean ceiling
   d. Clean molding
   e. Clean walls
   f. Clean pictures
   g. Clean shades
   h. Clean sections of radiators and hot air registers
   i. Clean air ventilators, using ladder
   j. Clean desks, other furniture, and chalk rails
   k. Clean gum from furniture and floor, and wash furniture
   l. Clean floor, strip or clean, refinish
   m. Clean light fixtures, replace tubes or lamps as needed
   n. Clean chalkboards
   o. Clean cabinets, sinks, etc.
   p. Clean glass
5. Clean halls
   a. Clean ceiling
   b. Clean moldings and walls, wash as required
   c. Clean pictures
   d. Clean sections of radiator or clean out hot air register
   e. Clean bends and outside of fire hose
   f. Clean gum from floor and sweep, strip or clean, and refinish
   g. Clean glass
6. Clean light fixtures
   a. Take down light shades or diffusers
   b. Dust off hanger
   c. Wash, dry, and replace shades or diffusers
   d. Replace tubes or lamps as needed
7. Clean all painted and varnished surfaces
   a. Wash dado paint work with neutral cleaner
   b. Wash woodwork, doors, baseboard, frame and trim with a neutral cleaner
   c. Wash desk irons with a neutral cleaner
   d. Wash desks with a neutral cleaner
   e. Wash furniture with a neutral cleaner
8. Varnishing and painting
   a. Varnish desks if necessary
   b. Varnish furniture if necessary
   c. Touch up varnished woodwork if necessary
   d. Wax plastic, formica or linoleum top desk with paste wax
9. Stairways
   a. Stairways should not be scrubbed until after hallways have been cleaned
   b. Stair steps and risers may be cleaned with normal floor cleaner
   c. Avoid flooding the back edges of wood steps, as most wooden stairs will leak, ruining the ceiling or walls below
   d. Stairways should be scrubbed by hand; other methods will result in spotted walls
   e. Stairways should be treated as soon as possible after they are dried before they are marked with footprints
      (1) Apply floor seal to wood stairs with a varnish brush
      (2) Do not apply slippery wax or other material to stair treads. Use only non-slip material
10. Miscellaneous
   a. Shades. After completing each operation in a room, draw the shades to preserve both old and new finishes. Sun shining on desk tops or other furniture will blister the varnish. The hot sun will soften resilient tile floors and cause colors to fade.
   b. Garbage Can. The can should be cleaned, dried, and stored in a safe area.
   c. Mistakes to be avoided in summer cleaning:
      (1) Not working to advantage. Systemize work in order to accomplish what must be done within the limited time
      (2) Streaking paint work. Wash dado and other paint work properly
      (3) Soiled baseboard. Avoid removing finish or damaging walls
      (4) Damaging floors. Prevent cleaning solution on floors from drying

CHECKLIST FOR SUMMER WORK

Areas of Work	Date to Begin	Date to Complete
ROOF REPAIR		
GUTTER REPAIR		
DOORS—WINDOWS—FRAMES		
Repair		
Refinish		
Paint		
Replace Glass		
Clean Windows		
DESKS		
Replace		
Repair		
Refinish		
CLASSROOM		
Clean Floors		
Refinish Floors (wax and seal)		
Sand Floors		
Paint		
Clean Walls and Ceiling		
OFFICE		
Clean Floors		
Sand Wood Floors		
Refinish Floors		
Clean Walls and Ceiling		
Paint		
GYMNASIUM		
Sand Floor		
Screen Disc Wood Floors		
Refinish (Seal) Wood Floors		
Paint New Lines		
Bleachers		
Clean Walls		
Paint		
CORRIDOR		
Clean Floors		
Sand Wood Floors		
Screen Disc Wood Floors		
Refinish (Seal and Wax)		
Clean Walls and Ceiling		
Paint		
Clean Lockers		
Repair Lockers		

Areas of Work	Date to Begin	Date to Complete
LOCKER ROOMS		
Floors		
Refinish		
Paint		
Mirrors		
TOILETS		
Clean		
Plumbing		
Paint		
CAFETERIA		
Clean		
Paint		
Repair		
(a) Tables		
(b) Chairs		
(c) Equipment		
GROUNDS		
Sidewalks		
Driveway		
Lawns		
Playground		
Equipment		
Prune Shrubbery		
LIGHTS		
Replace Bulbs		
Replace Fixtures		
Check Wiring		
Check Switches		
Clean Fixtures		
BOILER ROOM		
Prepare for Boiler Inspection		
Paint Walls		
Fuel Supply		
Boiler Repairs		
Clean Room		
STAIRWAYS		
Clean		
Refinish		
Paint		
Varnish		